

Product datasheet for **RC401172**

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: | G80S |
| Affected Codon#: | 80 |
| Affected NT#: | 238 |
| Nucleotide Mutation: | GCK Mutant (G80S), Myc-DDK-tagged ORF clone of Homo sapiens glucokinase (hexokinase 4) (GCK), transcript variant 1 as transfection-ready DNA |
| Effect: | Diabetes, MODY |
| Symbol: | Glucokinase |
| 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-MluI |



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ORF Nucleotide Sequence:

>RC401172 representing NM_000162
 Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC
 GCC**CGGATCGCC**

ATGCTGGACGACAGGCCAGGATGGAGGCCCAAGAAGGAGAAGGTAGAGCAGATCCTGGCAGAGTTCC
 AGCTGCAGGAGGAGACCTGAAGAAGGTGATGAGACGGATGCAGAAGGAGATGGACCGCGCCTGAGGCT
 GGAGACCCATGAAGAGGCCAGTGTGAAGATGCTGCCACCTACGTGCGCTCCACCCAGAAAGGCTCAGAA
 GTCGGGGACTTCTCCTGGACCTGAGTGGCACTAACTTCAGGGTGTGCTGGTGAAGGTGGGAGAAG
 GTGAGGAGGGCAGTGGAGCGTGAAGACCAAACACCAGATGTAATCCATCCCGAGGACGCCATGACCGG
 CACTGCTGAGATGCTCTCGACTACATCTCTGAGTGCATCTCCGACTTCTGGACAAGCATCAGATGAAA
 CACAAGAAGCTGCCCTGGGCTTCACTTCTCCTTTCTGTGAGGCACGAAGACATCGTAAGGGCATCC
 TTCTCAACTGGACCAAGGGCTTCAAGGCCTCAGGAGCAGAAGGGAACAATGTCGTGGGGCTTCTGCGAGA
 CGCTATCAAACGGAGAGGGGACTTTGAAATGGATGTGGTGGCAATGGTGAATGACACGGTGGCCACGATG
 ATCTCCTGCTACTACGAAGACCATCAGTGCAGGTCGGCATGATCGTGGGCACGGGCTGCAATGCCTGCT
 ACATGGAGGAGATGCAGAATGTGGAGCTGGTGGAGGGGACGAGGGCCGATGTGCGTCAATACCGAGTG
 GGGCGCCTTCGGGACTCCGGCGAGCTGGACGAGTTCTGCTGGAGTATGACCGCCTGGTGGACGAGAGC
 TCTGCAAACCCGGTCAGCAGCTGTATGAGAAGCTCATAGGTGGCAAGTACATGGGCGAGCTGGTGGCGC
 TTGTGCTGCTCAGGCTCGTGACGAAAACCTGCTCTCCACGGGGAGGCTCCGAGCAGCTGCGCACACG
 CGGAGCCTTCGAGACGCGCTTCTGTGCGAGGTGGAGAGCGACACGGGCGACCGCAAGCAGATCTACAAC
 ATCTGAGCAGCTGGGGCTGCGACCTCGACCACCGACTGCGACATCGTGGCCGCGCTGCGAGAGCG
 TGCTACGCGCGCTGCGCACATGTGCTCGCGGGGCTGGCGGGGCTCATCAACCGCATGCGCGAGAGCCG
 CAGCGAGGACGTAAATGCCATCACTGTGGCGTGGATGGCTCCGTGTACAAGCTGCACCCAGCTTCAAG
 GAGCGGTTCCATGCCAGCTGCCAGGCTGACGCCAGCTGCGAGATCACCTTATCGAGTGGAGGAGG
 GCAGTGGCCGGGCGCGGCCCTGGTCTCGCGGTGGCCTGTAAGAAGGCCTGTATGCTGGCCAG

AG**CGGACCG**ACGCGTACGCGGCCGCTCGAGCAGAACTCATCTCAGAAGAGGATCTGGCAGCAAATGATATCC
 TGGATTACAAGGATGACGACGA TAAGGTTTAA

Protein Sequence:

>RC401172 representing NM_000162
 Red=Cloning site Green=Tags(s)

MLDDRARMEAAKKEKVEQILAEFQLQEEDLKKVMRRMQKEMDRGLRLETHEEASVKMLPTYVVRSTPEGSE
 VGDFLSLDLSGTNFRVMLVKVGEEGQWSVKTKHQMYSIPEDAMTGTAEMLFDYISECISDFLDKHQMK
 HKKLPLGFTFSFPVRHEDIDKGILLNWTGFKASGAEGNNVGLLRDAIKRRGDFEMDVVAMVNDTVATM
 ISCYYEDHQCEVGMIVGTGCNACYMEEMQNVELVEGDEGRMCVNTWGFAGDSGELDEFLLLEYDRLVDES
 SANPGQQLYEKLIGGKYMGEVRLVLLRLVDENLLFHGEASEQLRTRGAFETRFVSQVESDTGDRKQIYN
 ILSTLGLRPSTTDCDIVRRACESVSTRAAHMCSAGLAGVINRMRESRSEDVMRITVGVDSVYKLGHPK
 ERFHASVRRLLTPSCEITFIESEEGSGRGAALVSAVACKKACMLGQ

SGPTRTRRLE**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]