

Product datasheet for RC401259

OriGene Technologies, Inc.

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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: C220X

Affected Codon#: 220

Affected NT#: 660

Nucleotide Mutation: GCK Mutant (C220X), 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 Neomycin

Selection:

Vector: pCMV6-Entry (PS100001)

Tag: Myc-DDK
ACCN: NM 000162

ORF Size: 657 bp

Restriction Sites: Sgfl-Mlul



ORF Nucleotide Sequence:

>RC401259 representing NM_000162
Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCCGCCGCGATCGCC

ATGCTGGACGACAGAGCCAGGATGGAGGCCGCCAAGAAGGAGAAGGTAGAGCAGATCCTGGCAGAGTTCC
AGCTGCAGGAGGAGGACCTGAAGAAGGTGATGAGACGGATGCAGAAGGAGAGATGCACCCCGGCCTGAGGCT
GGAGACCCATGAAGAAGGCCAGTGTGAAGATGCTGCCCACCTACGTGCGCTCCACCCCAGAAGGCTCAGAA
GTCGGGGACTTCCTCTCCCTGGACCTGGGTGGCACTAACTTCAGGGTGATGCTGGTGAAGGTGGGAGAAG
GTGAGGAGGGGCAGTGGAGCCTGAAGACCAAACACCAGATGTACTCCATCCCCGAGGACGCCATGACCGG
CACTGCTGAGATGCTCTTCGACTACATCTCTGAGTGCATCTCCGACTTCCTGGACAAGCATCAGATGAAA
CACAAGAAGCTGCCCCTGGGCTTCACCTTCTCTTTCCTGTGAGGCACGAAGACATCGATAAGGGCATCC
TTCTCAACTGGACCAAGGGCTTCAAGGCCTCAGGAGACAAGACAATGTCGTGGGGCTTCTGCGAGA
CGCTATCAAACGGAGAGAGGGACTTTGAAATGGATGTGGTGGCAATGATGACACGGTGGCCACGATG
ATCTCCTGCTACTACGAAGACCATCAG

AGCGGACCGACGCGTACGCGGCCGCTCGAGCAGAAACTCATCTCAGAAGAGGATCTGGCAGCAAATGATATCCTCGGATTACAAGGATGACGACGA TAAGGTTTAA

Protein Sequence:

>RC401259 representing NM_000162
Red=Cloning site Green=Tags(s)

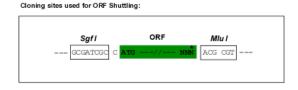
MLDDRARMEAAKKEKVEQILAEFQLQEEDLKKVMRRMQKEMDRGLRLETHEEASVKMLPTYVRSTPEGSE VGDFLSLDLGGTNFRVMLVKVGEGEEGQWSVKTKHQMYSIPEDAMTGTAEMLFDYISECISDFLDKHQMK HKKLPLGFTFSFPVRHEDIDKGILLNWTKGFKASGAEGNNVVGLLRDAIKRRGDFEMDVVAMVNDTVATM ISCYYEDHQ

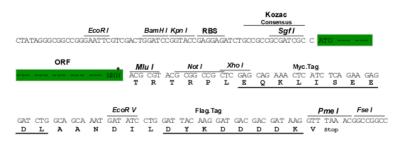
SGPTRTRRLEQKLISEEDLAANDILDYKDDDDK**V**

Restriction Sites:

Sgfl-Mlul

Cloning Scheme:





^{*} The last codon before the Stop codon of the ORF



Glucokinase (GCK) (NM_000162) Human Mutant ORF Clone - RC401259

OTI Disclaimer: The molecular sequence of this clone aligns with the gene accession number as a point of

reference only. However, individual transcript sequences of the same gene can differ through naturally occurring variations (e.g. polymorphisms), each with its own valid existence. This clone is substantially in agreement with the reference, but a complete review of all prevailing

variants is recommended prior to use. More info

OTI Annotation: This clone was engineered to express the complete ORF with an expression tag. Expression

varies depending on the nature of the gene.

Components: The ORF clone is ion-exchange column purified and shipped in a 2D barcoded Matrix tube

containing 10ug of transfection-ready, dried plasmid DNA (reconstitute with 100 ul of water).

RefSeg: NP 000153

RefSeq Size: 657 bp
RefSeq ORF: 1398 bp
Locus ID: 2645

Cytogenetics: 7p13

Protein Families: Druggable Genome

Protein Pathways: Amino sugar and nucleotide sugar metabolism, Galactose metabolism, Glycolysis /

Gluconeogenesis, Insulin signaling pathway, Maturity onset diabetes of the young, Metabolic

pathways, Starch and sucrose metabolism, Type II diabetes mellitus

MW: 24.1 kDa

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]