

Product datasheet for **RC218920**

Glucokinase (GCK) (NM_033508) Human Tagged ORF Clone

Product data:

Product Type:	Expression Plasmids
Product Name:	Glucokinase (GCK) (NM_033508) Human Tagged ORF Clone
Tag:	Myc-DDK
Symbol:	Glucokinase
Synonyms:	FGQTL3; GK; GLK; HHF3; HK4; HKIV; HXKP; LGLK; MODY2; PNDM1
Mammalian Cell Selection:	Neomycin
Vector:	pCMV6-Entry (PS100001)
E. coli Selection:	Kanamycin (25 ug/mL)



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ORF Nucleotide Sequence:

>RC218920 representing NM_033508
 Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC
 GCC**GCGATCGCC**

ATGCCAGACCAAGATCCCAACTCCACAACCCAACCTCCAGGTAGAGCAGATCCTGGCAGAGTTCCAGC
 TGCAGGAGGAGGACCTGAAGAAGGTGATGAGACGGATGCAGAAGGAGATGGACCGCGCCTGAGGCTGGA
 GACCCATGAAGAGGCCAGTGTGAAGATGCTGCCACCTACGTGCGCTCCACCCAGAAAGGCTCAGAAGTC
 GGGGACTTCTCTCCCTGGACTGGGTGGCACTAACTTCAGGGTGTGCTGGTGAAGGTGGGAGAAGGTG
 AGGAGGGGCAGTGGAGCGTGAAGACCAACACCAGATGTACTCCATCCCCGAGGACGCCATGACCGGCAC
 TGCTGAGATGCTTTCGACTACATCTCTGAGTGCATCTCCGACTTCTGGACAAGCATCAGATGAAACAC
 AAGAAGCTGCCCTGGGCTTACCTTCTCTTTCTGTGAGGCACGAAGACATCGATAAGGGCATCCTTC
 TCAACTGGACCAAGGGCTTCAAGGCCTCAGGAGCAGAAGGGAACAATGTCGTGGGCTTCTGCGAGACGC
 TATCAAACGGAGAGGGGACTTTGAAATGGATGTGGTGGCAATGGTGAATGACACGGTGGCCACGATGATC
 TCCTGCTACTACGAAGACCATCAGTGCAGGTCGGCATGATCGTGGGCACGGGCTGCAATGCCTGCTACA
 TGGAGGAGATGCAGAATGTGGAGCTGGTGGAGGGGACGAGGGCCGCATGTGCGTCAATACCGAGTGGGG
 CGCCTTCGGGGACTCCGGCGAGCTGGACGAGTTCCTGCTGGAGTATGACCGCCTGGTGGACGAGAGCTCT
 GCAAACCCCGGTGAGCAGCTGTATGAGAAGCTCATAGGTGGCAAGTACATGGGCGAGCTGGTGGCGCTTG
 TGCTGCTCAGGCTCGTGGACGAAAACCTGCTCTTCCACGGGGAGGCTCCGAGCAGCTGCGCACACGCGG
 AGCCTTCGAGACGCGCTTCGTGTCGAGGTGGAGAGCGACACGGGCGACCGCAAGCAGATCTACAACATC
 CTGAGCACGCTGGGCTGCGACCCTCGACCACCGACTGCGACATCGTGGCCGCGCTGCGAGAGCGTGT
 CTACGCGCGCTGCGCACATGTGCTCGGCGGGCTGGCGGGCGTCATCAACCGCATGCGCGAGAGCCGAG
 CGAGGACGTAATGCGCATCACTGTGGCGTGGATGGCTCCGTGTACAAGCTGCACCCAGCTTCAAGGAG
 CGGTTCCATGCCAGCGTGCAGGCTGACGCCCAGCTGCGAGATCACCTTCATCGAGTCGGAGGAGGGCA
 GTGGCCGGGGCGCGCCCTGGTCTCGGCGGTGGCTGTAAAGAAGGCTGTATGCTGGGCCAG

ACGCGTACGCGGGCGCTCGAGCAGAACTCATCTCAGAAGAGGATCTGGCAGCAAATGATATCCTGGATT
 ACAAGGATGACGACGATAAGGTTTAA

Protein Sequence:

>RC218920 representing NM_033508
 Red=Cloning site Green=Tags(s)

MPPRRSQLPQNSQVEQILAEFQLQEEDLKKVMRRMQKEMDRGLRLETHEEASVKMLPTYVVRSTPEGSEV
 GDFLSLDLGGTNFRVMLVKVGEEGEQWSVKTKHQMYSIPEDAMTGAEMLFDYISECISDFLDKHQMKH
 KKLPLGFTFSFPVRHEDIDKGILLNWTGFKASGAEGNNVVGLLRDAIKRRGDFEMDVVAMVNDTVATMI
 SCYYEDHQCEVGMIVGTGCNACYMEEMQNVELVEGDEGRMCVNTEWGAFGDSGELDEFLLLEYDRLVDESS
 ANPGQQLYEKLIIGKYMGEVLVLLRLVDENLLFHGEASEQLRTRGAFETRFVSQVESDGTDRKQIYNI
 LSTLGLRPSTTDCDIVRRACESVSTRAAHMCSAGLAGVINRMRESRSEDVMRITVGVGDGSVYKLPSPFKE
 RFHASVRRLLTPSCEITFIESEEGSRGAALVSAVACKKACMLGQ

TRTRPLEQKLISEEDLAANDILDYKDDDDKV

Chromatograms:

https://cdn.origene.com/chromatograms/mk6117_d05.zip

Restriction Sites:

Sgfl-MluI

Cloning Scheme:


ACCN: NM_033508

ORF Size: 1392 bp

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).

Reconstitution Method:

1. Centrifuge at 5,000xg for 5min.
2. Carefully open the tube and add 100ul of sterile water to dissolve the DNA.
3. Close the tube and incubate for 10 minutes at room temperature.
4. Briefly vortex the tube and then do a quick spin (less than 5000xg) to concentrate the liquid at the bottom.
5. Store the suspended plasmid at -20°C. The DNA is stable for at least one year from date of shipping when stored at -20°C.

RefSeq: [NM_033508.3](#)

RefSeq Size: 2566 bp

RefSeq ORF: 1395 bp

Locus ID: 2645

UniProt ID: [P35557](#)

Cytogenetics: 7p13

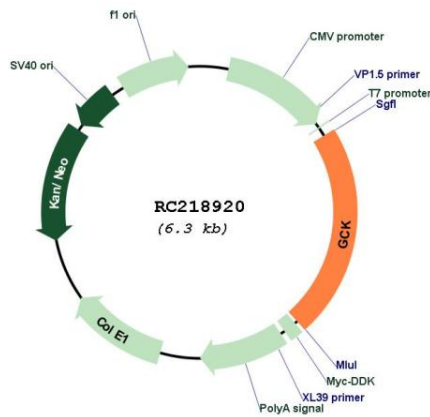
Protein Families: Druggable Genome

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

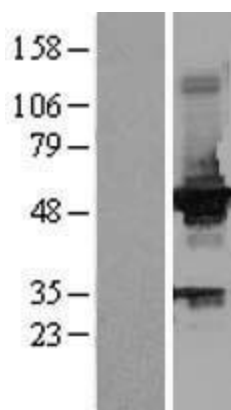
MW: 51.9 kDa

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]

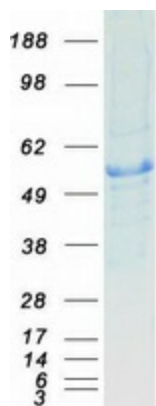
Product images:



Circular map for RC218920



Western blot validation of overexpression lysate (Cat# [LY403250]) using anti-DDK antibody (Cat# [TA50011-100]). Left: Cell lysates from untransfected HEK293T cells; Right: Cell lysates from HEK293T cells transfected with RC218920 using transfection reagent MegaTran 2.0 (Cat# [TT210002]).



Coomassie blue staining of purified GCK protein (Cat# [TP318920]). The protein was produced from HEK293T cells transfected with GCK cDNA clone (Cat# RC218920) using MegaTran 2.0 (Cat# [TT210002]).