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Product datasheet for RC200472

Glucokinase (GCK) (NM_000162) Human Tagged ORF Clone

Product data:

Product Type:	Expression Plasmids
Product Name:	Glucokinase (GCK) (NM_000162) 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:

>RC200472 ORF sequence
Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC
GCCGCGATCGCC

ATGCTGGACGACAGAGCCAGGATGGAGGCCGCCAAGAAGGAGAAGGTAGAGCAGATCCTGGCAGAGTTCC
AGCTGCAGGAGGAGGACCTGAAGAAGGTGATGAGACGGATGCAGAAGGAGATGGACCGCGGCCTGAGGCT
GGAGACCCATGAAGAGGCCAGTGTGAAGATGCTGCCCACCTACGTGCGCTCCACCCCAGAAGGCTCAGAA
GTCGGGGACTTCCTCTCCCTGGACCTGGGTGGCACTAACTTCAGGGTGATGCTGGTGAAGGTGGGAGAAG
GTGAGGAGGGGCAGTGGAGCGTGAAGACCAAACACCAGATGTACTCCATCCCCGAGGACGCCATGACCGG
CACTGCTGAGATGCTCTTCGACTACATCTCTGAGTGCATCTCCGACTTCCTGGACAAGCATCAGATGAAA
CACAAGAAGCTGCCCCTGGGCTTCACCTTCTCCTTTCCTGTGAGGCACGAAGACATCGATAAGGGCATCC
TTCTCAACTGGACCAAGGGCTTCAAGGCCTCAGGAGCAGAAGGGAACAATGTCGTGGGGCTTCTGCGAGA
CGCTATCAAACGGAGAGGGGACTTTGAAATGGATGTGGTGGCAATGGTGAATGACACGGTGGCCACGATG
ATCTCCTGCTACTACGAAGACCATCAGTGCGAGGTCGGCATGATCGTGGGCACGGGCTGCAATGCCTGCT
ACATGGAGGAGATGCAGAATGTGGAGCTGGTGGAGGGGGACGAGGGCCGCATGTGCGTCAATACCGAGTG
GGGCGCCTTCGGGGACTCCGGCGAGCTGGACGAGTTCCTGCTGGAGTATGACCGCCTGGTGGACGAGAGC
TCTGCAAACCCCGGTCAGCAGCTGTATGAGAAGCTCATAGGTGGCAAGTACATGGGCGAGCTGGTGCGGC
TTGTGCTGCTCAGGCTCGTGGACGAAAACCTGCTCTTCCACGGGGAGGCCTCCGAGCAGCTGCGCACACG
CGGAGCCTTCGAGACGCGCTTCGTGTCGCAGGTGGAGAGCGACACGGGCGACCGCAAGCAGATCTACAAC
ATCCTGAGCACGCTGGGGCTGCGACCCTCGACCACCGACTGCGACATCGTGCGCCGCGCCTGCGAGAGCG
TGTCTACGCGCGCTGCGCACATGTGCTCGGCGGGGCTGGCGGGCGTCATCAACCGCATGCGCGAGAGCCG
CAGCGAGGACGTAATGCGCATCACTGTGGGCGTGGATGGCTCCGTGTACAAGCTGCACCCCAGCTTCAAG
GAGCGGTTCCATGCCAGCGTGCGCAGGCTGACGCCCAGCTGCGAGATCACCTTCATCGAGTCGGAGGAGG
GCAGTGGCCGGGGCGCGGCCCTGGTCTCGGCGGTGGCCTGTAAGAAGGCCTGTATGCTGGGCCAG

ACGCGTACGCGGCCGCTCGAGCAGAAACTCATCTCAGAAGAGGATCTGGCAGCAAATGATATCCTGGATT
ACAAGGATGACGACGATAAGGTTTAA

Protein Sequence:

>RC200472 protein sequence
Red=Cloning site Green=Tags(s)

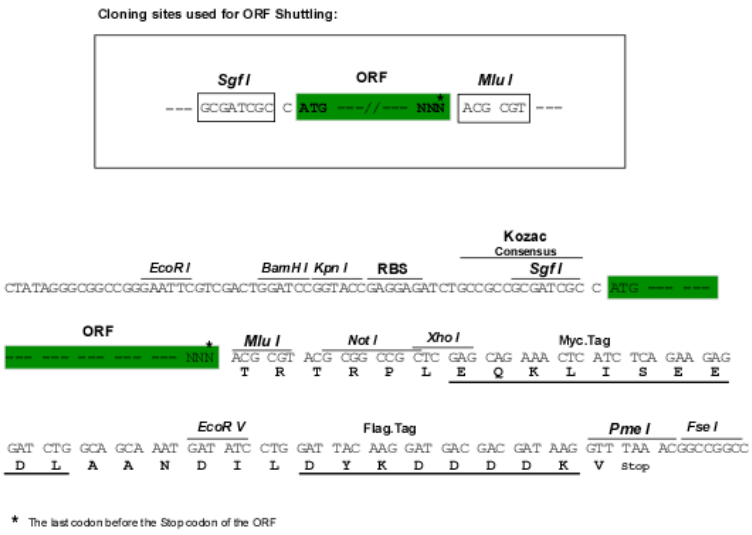
MLDDRARMEAAKKEKVEQILAEFQLQEEDLKKVMRRMQKEMDRGLRLETHEEASVKMLPTYVRSTPEGSE
VGDFLSLDLGGTNFRVMLVKVGEGEEGQWSVKTKHQMYSIPEDAMTGTAEMLFDYISECISDFLDKHQMK
HKKLPLGFTFSFPVRHEDIDKGILLNWTKGFKASGAEGNNVVGLLRDAIKRRGDFEMDVVAMVNDTVATM
ISCYYEDHQCEVGMIVGTGCNACYMEEMQNVELVEGDEGRMCVNTEWGAFGDSGELDEFLLEYDRLVDES
SANPGQQLYEKLIGGKYMGELVRLVLLRLVDENLLFHGEASEQLRTRGAFETRFVSQVESDTGDRKQIYN
ILSTLGLRPSTTDCDIVRRACESVSTRAAHMCSAGLAGVINRMRESRSEDVMRITVGVDGSVYKLHPSFK
ERFHASVRRLTPSCEITFIESEEGSGRGAALVSAVACKKACMLGQ

TRTRPLEQKLISEEDLAANDILDYKDDDDKV

Chromatograms: https://cdn.origene.com/chromatograms/mk6082_e12.zip

Restriction Sites: SgfI-MluI

Cloning Scheme:



ACCN: NM_000162

ORF Size: 1395 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.

Note: Plasmids are not sterile. For experiments where strict sterility is required, filtration with 0.22um filter is required.

RefSeq: NM_000162.5

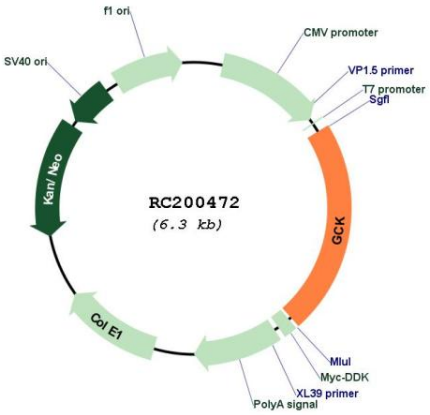
RefSeq Size: 2741 bp

RefSeq ORF: 1398 bp

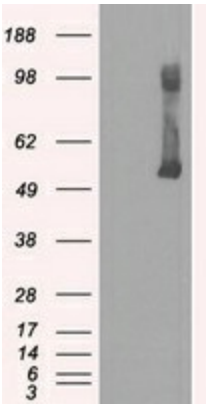
Locus ID: 2645

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:	52.2 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]

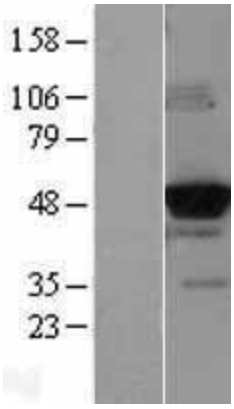
Product images:



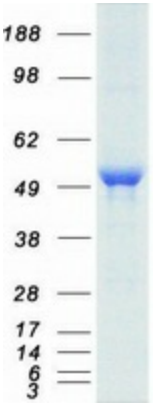
Circular map for RC200472



HEK293T cells were transfected with the pCMV6-ENTRY control (Cat# [PS100001], Left lane) or pCMV6-ENTRY GCK (Cat# RC200472, Right lane) cDNA for 48 hrs and lysed. Equivalent amounts of cell lysates (5 ug per lane) were separated by SDS-PAGE and immunoblotted with anti-GCK(Cat# [TA500459]). Positive lysates [LY400059] (100ug) and [LC400059] (20ug) can be purchased separately from OriGene.



Western blot validation of overexpression lysate (Cat# [LY400059]) using anti-DDK antibody (Cat# [TA50011-100]). Left: Cell lysates from un-transfected HEK293T cells; Right: Cell lysates from HEK293T cells transfected with RC200472 using transfection reagent MegaTran 2.0 (Cat# [TT210002]).



Coomassie blue staining of purified GCK protein (Cat# [TP300472]). The protein was produced from HEK293T cells transfected with GCK cDNA clone (Cat# RC200472) using MegaTran 2.0 (Cat# [TT210002]).