

Product datasheet for **SC305649**

Glucokinase (GCK) (NM_033507) Human Untagged Clone

Product data:

Product Type:	Expression Plasmids
Product Name:	Glucokinase (GCK) (NM_033507) Human Untagged Clone
Tag:	Tag Free
Symbol:	Glucokinase
Synonyms:	FGQTL3; GK; GLK; HHF3; HK4; HKIV; HXKP; LGLK; MODY2; PNDM1
Mammalian Cell Selection:	None
Vector:	<u>pCMV6-XL5</u>
E. coli Selection:	Ampicillin (100 ug/mL)



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Fully Sequenced ORF:

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>OriGene sequence for NM_033507 edited
ATGGCGATGGATGCACAAGGAGCCAGGCCAGACAGCCTTGACTCTGGTAGAGCAGATC
CTGGCAGAGTTCCAGCTGCAGGAGGAGGACCTGAAGAAGGTGATGAGACGGATGCAGAAG
GAGATGGACCGCGGCCTGAGGCTGGAGACCCATGAAGAGGCCAGTGTGAAGATGCTGCC
ACCTACGTGCGCTCCACCCAGAAAGGCTCAGAAGTCGGGGACTTCCTCTCCCTGGACCTG
GGTGGCACTAACTTCAGGGTGATGCTGGTGAAGGTGGGAGAAGGTGAGGAGGGGCAGTGG
AGCGTGAAGACCAAACACCAGATGTACTCCATCCCCGAGGACGCCATGACCGCACTGCT
GAGATGCTCTTCGACTACATCTCTGAGTGCATCTCCGACTTCCTGGACAAGCATCAGATG
AAACACAAGAAGCTGCCCTGGGCTTCACTTCTCCTTTCTGTGAGGCAGGAAGACATC
GATAAGGGCATCCTTCTCAACTGGACCAAGGGCTCAAGGCCCTCAGGAGCAGAAGGGAAC
AATGTCGTGGGGCTTCTGCGAGACGCTATCAAACGGAGAGGGGACTTTGAAATGGATGTG
GTGGCAATGGTGAATGACACGGTGGCCACGATGATCTCCTGCTACTACGAAGACCATCAG
TGCGAGGTCGGCATGATCGTGGCACGGGCTGCAATGCCTGCTACATGGAGGAGATGCAG
AATGTGGAGCTGGTGGAGGGGGACGAGGCCGCATGTGCGTCAATACCGAGTGGGGCGCC
TTCGGGGACTCCGGCGAGCTGGACGAGTTCCTGCTGGAGTATGACCGCCTGGTGGACGAG
AGCTCTGCAAACCCCGTCCAGCAGCTGTATGAGAAGCTCATAGGTGGCAAGTACATGGGC
GAGCTGGTGGCGCTTGTGCTGCTCAGGCTCGTGGACGAAAACCTGCTCTTCCACGGGGAG
GCCTCCGAGCAGCTGCGCACACGCGGAGCCTTCGAGACGCGCTTCGTGTGCGAGGTGGAG
AGCGACACGGGGACCGCAAGCAGATCTACAACATCCTGAGCAGCTGGGGCTGCGACCC
TCGACCACCGACTGCGACATCGTGCGCCGCGCTGCGAGAGCGTGTCTACGCGCGCTGCG
CACATGTGCTCGGCGGGCTGGCGGGCGTCAACCAGCATGCGCGAGAGCCGCGACGGAG
GACGTAATGCGCATCACTGTGGCGTGGATGGCTCCGTGTACAAGCTGCACCCAGCTTC
AAGGAGCGGTTCCATGCCAGCGTGCAGGCTGACGCCAGCTGCGGAGATCACCTTCATC
GAGTCGGAGGAGGGCAGTGGCCGGGGCGCGCCCTGGTCTCGGGCGTGGCCTGTAAAGAAG
GCCTGTATGCTGGGCCAGTGAGAGCAGTGGCCGCAAGCGCAGGGAGGATGCCACAGCCCC
ACAGCACCCAGGCTCCATGGGAAGTGCTCCCCACACGTGCTCGCAGCCTGGCGGGGCGAG
GAGGCCTGGCCTTGTGAGGACCCAGGCCGCTGCCATACCGCTGGGGAACAGAGCGGGCC
TCTTCCCTCAGTTTTTTCGGTGGGACAGCCCCAGGGCCCTAACGGGGGTGCGGCAGGAGCA
GGAACAGAGACTCTGGAAGCCCCCACCTTCTCGCTGGAATCAATTTCCAGAAGGGAG
TTGCTCACTCAGGACTTTGATGCATTTCCACACTGTCAGAGCTGTTGGCCTCGCCTGGC
CCAGGCTCTGGGAAGGGGTGCCCTCTGGATCCTGCTGTGGCCTCACTTCCCTGGGAACTC
ATCCTGTGTGGGAGGCAGCTCCAACAGCTTGACCAGACCTAGACCTGGGCCAAAAGGGC
AGCCAGGGGCTGCTCATACCCAGTCTGGCCATTTTCTGCTGAGGCTCAAGAGGGCC
AGGGAGCAATGGGAGGGGGCTCCATGGAGGAGGTGTCCCAAGCTTTGAATACCCCGAGAG
ACCTTTTCTCTCCATACCATCACTGAGTGGCTTGTGATTCTGGGATGGACCCCTCGCAGC
AGGTGCAAGAGACAGAGCCCCAAGCCTCTGCCCAAGGGGCCACAAAGGGGAGAAGGG
CCAGCCCTACATTTAGCTCCCATAGCGCTGGCTCAGGAAGAAACCCCAAGCAGCATTCC
AGCACACCCCAAGGGACAACCCCATCATATGACATGCCACCCTCTCCATGCCAACCTAA
GATTGTGTGGTTTTTTAATTAATAAATGTTAAAAGTTTTAAAAAAAAAAAAAAAAAAAAAA
AA
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5' Read Nucleotide Sequence:	>OriGene 5' read for NM_033507 unedited GAGCAAGTGTATACGACTCCTATAGGGCGGCCGCTGAATTCATGGCGATGGATGTCACAA GGAGCCAGGCCAGACAGCCTTGACTCTGGTAGAGCAGATCCTGGCAGAGTTCCAGCTGC AGGAGGAGGACCTGAAGAAGGTGATGAGACGGATGCAGAAGGAGATGGACCGCGCCCTGA GGCTGGAGACCCATGAAGAGGCCAGTGTGAAGATGCTGCCACCTACGTGCGCTCCACCC CAGAAGGCTCAGAAGTCGGGGACTTCTCTCCCTGGACCTGGGTGGCACTAACTCAGGG TGATGCTGGTGAAGGTGGGAGAAGGTGAGGAGGGGCACTGGAGCGTGAAGACCAAACACC AGATGTACTCCATCCCCGAGGACGCCATGACCGGCACTGCTGAGATGCTCTTCGACTACA TCTCTGAGTGCATCTCCGACTTCTCTGGACAAGCATCAGATGAAACACAAGAAGCTGCCCC TGGGCTTACCTTCTCTTTCTGTGAGGCACGAAGACATCGATAAGGGCATCCTTCTCA ACTGGACCAAGGGCTTCAAGGCCTCAGGAGCAGAAGGGAACAATGTCGTGGGGCTTCTGC GAGACGCTATCAAACGGAGAGGGGACTTTGAAATGGATGTGGTGGCAATGGTGAATGACA CGGTGGCCACGATGATCTCTGCTACTACGAAGACCATCAGTGCAGGTCCGCATGATCG TGGGCACGGGCTGCAATGCCTGTACATGGAGGAGATGCAGAATGTGGAGCTGGTGGAGG GGACGAGGGCCGATGTGCGTCAATACCGAGTGGGGCGCCTTCGGGACTCCGGCGAGCTG GACGAGTTCCTGCTGAGTATGACCGCCTGGTGGACGAGAGCTCTGCAAACCCCGTACGA GCTGTATGAGAGCTCATAGTGCAGTACATGGGGGAGCTGTGCGCTTGTGCTGCTCAGCTC GTGACAAAACCTGCTTCTTCAGGGGAGGCCTCCGAGACAGCTG
3' Read Nucleotide Sequence:	>OriGene 3' genomic read for NM_033507 unedited CGCGATGCACTTCAGGGCCGAGAGGCACTGGGGAGGGTACAGGGATGCCACCCGGGA TCTGTTACAGAAACAGCTATGACCGCGCCGCAATCTAGAGTCGAGTTTTTTTTTTTTTT TTTTTTTTTAAAACCTTTAACATTTTTAATTAATAAAACCCACACAATCTTAGGTTGGGCA TGGAGAGGGTGGCATGTCATATGATGGGGTTGTCCCTTGGGGTGTGCTGAATGCTGCTTG GGGTTTCTTCTGAGCCAGCGCTATGGGAGCTGAAGATGTAGGGCTGGCCCTTCTCCCCT TTGTGGGCCCCTTGGGGCAGAGGCTTGGGGGCTGTGCTCTTGCACCTGCTGCGAGGGTC CATCCCAGAATCACAAGCCACTCAGTGTGGTATGGGAGAGAAAAGTCTCTGGGGGTAT TCAAAGCTTGGGACACCTCCTCCATGGAGCCCCCTCCATTGCTCCCTGGGCCTTTGAG CCTCAGGCAAGAAAATGGCCAGGACTGGGTGATGAGCAGCCCCCTGGCTGCCCTTTTGGCC CAGGTCTAGGTCTGGTCAAGCTGTTGGAGCTGCCTCCCCACAGGATGAGTTCCAGGG AAGTGAGGCCACAGCAGGATCCAGAGGGCACCCCTTCCCAGAGCCTGGGCCAGGCGAGG CCAACAGCTCTGACAGTGTGAAATGCATCAAAGTCTGAGTGAAGCAACTCCCTTCTGGG AAATTGATTCCAGCGAGAAAGGTGGGGGCTTCCAGAGTCTCTGTTCTGCTCCTGCCGC ACCCCCGTAGGGCCCTGGGGCTGTCCACCGAAAACCTGAGGAAGAGGCCCGCTCTGTT CCAGCGTATTTGGCAGGCGCTGGTCTGACAGCAGCCTCTGCCCGAGCTGCAGCACGTGT GGGGAGCACTTCCATGAGCTGGGTGCTGGGGGCTGTGCATCTCCTGCGCTTGGC
Restriction Sites:	Please inquire
ACCN:	NM_033507
Insert Size:	2300 bp
OTI Disclaimer:	Our molecular clone sequence data has been matched to the reference identifier above as a point of reference. Note that the complete sequence of our molecular clones may differ from the sequence published for this corresponding reference, e.g., by representing an alternative RNA splicing form or single nucleotide polymorphism (SNP).
OTI Annotation:	The open reading frame of this TrueClone was fully sequenced and found to be a perfect match to the protein associated to this reference.
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:	<ol style="list-style-type: none">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_033507.1 , NP_277042.1
RefSeq Size:	2442 bp
RefSeq ORF:	1401 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
Gene Summary:	<p>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]</p> <p>Transcript Variant: This variant (2) encodes the major isoform expressed in liver. Its first exon is specific to the liver transcripts, variants 2 and 3, but it lacks a second liver-specific exon found in variant 3. Isoform 2 has a distinct N-terminus; the remainder of the protein is identical to isoforms 1 and 3.</p>