OriGene Technologies, Inc.
9620 Medical Center Drive, Ste 200
Rockville, MD 20850, US
Phone: +1-888-267-4436
https://www.origene.com
techsupport@origene.com
EU: info-de@origene.com
CN: techsupport@origene.cn

Product datasheet for RC209482

Hexokinase II (HK2) (NM_000189) Human Tagged ORF Clone

Product data:

Product Type:	Expression Plasmids
Product Name:	Hexokinase II (HK2) (NM_000189) Human Tagged ORF Clone
Tag:	Myc-DDK
Symbol:	HK2
Synonyms:	HKII; HXK2
Mammalian Cell Selection:	Neomycin
Vector:	pCMV6-Entry (PS100001)
E. coli Selection:	Kanamycin (25 ug/mL)

ORF Nucleotide Sequence:

>RC209482 representing NM_000189
Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC
GCCGCGATCGCC

ATGATTGCCTCGCATCTGCTTGCCTACTTCTTCACGGAGCTCAACCATGACCAAGTGCAGAAGGTTGACC
AGTATCTCTACCACATGCGCCTCTCTGATGAGACCCTCTTGGAGATCTCTAAGCGGTTCCGCAAGGAGAT
GGAGAAAGGGCTTGGAGCCACCACTCACCCTACTGCAGCAGTGAAGATGCTGCCCACCTTTGTGAGGTCC
ACTCCAGATGGGACAGAACACGGAGAGTTCCTGGCTCTGGATCTTGGAGGGACCAACTTCCGTGTGCTTT
GGGTGAAAGTAACGGACAATGGGCTCCAGAAGGTGGAGATGGAGAATCAGATCTATGCCATCCCTGAGGA
CATCATGCGAGGCAGTGGCACCCAGCTGTTTGACCACATTGCCGAATGCCTGGCTAACTTCATGGATAAG
CTACAAATCAAAGACAAGAAGCTCCCACTGGGTTTTACCTTCTCGTTCCCCTGCCACCAGACTAAACTAG
ACGAGAGTTTCCTGGTCTCATGGACCAAGGGATTCAAGTCCAGTGGAGTGGAAGGCAGAGACGTTGTGGC
TCTGATCCGGAAGGCCATCCAGAGGAGAGGGGACTTTGATATCGACATTGTGGCTGTGGTGAATGACACA
GTTGGGACCATGATGACCTGTGGTTATGATGACCACAACTGTGAGATTGGTCTCATTGTGGGCACGGGCA
GCAACGCCTGCTACATGGAAGAGATGCGCCACATCGACATGGTGGAAGGCGATGAGGGGCGGATGTGTAT
CAATATGGAGTGGGGGGCCTTCGGGGACGATGGCTCGCTCAACGACATTCGCACTGAGTTTGACCAGGAG
ATTGACATGGGCTCACTGAACCCGGGAAAGCAACTGTTTGAGAAGATGATCAGTGGGATGTACATGGGGG
AGCTGGTGAGGCTTATCCTGGTGAAGATGGCCAAGGAGGAGCTGCTCTTTGGGGGGAAGCTCAGCCCAGA
GCTTCTCAACACCGGTCGCTTTGAGACCAAAGACATCTCAGACATTGAAGGGGAGAAGGATGGCATCCGG
AAGGCCCGTGAGGTCCTGATGCGGTTGGGCCTGGACCCGACTCAGGAGGACTGCGTGGCCACTCACCGGA
TCTGCCAGATCGTGTCCACACGCTCCGCCAGCCTGTGCGCAGCCACCCTGGCCGCCGTGCTGCAGCGCAT
CAAGGAGAACAAAGGCGAGGAGCGGCTGCGCTCTACTATTGGGGTCGACGGTTCCGTCTACAAGAAACAC
CCCCATTTTGCCAAGCGTCTACATAAGACCGTGCGGCGGCTGGTGCCCGGCTGCGATGTCCGCTTCCTCC
GCTCCGAGGATGGCAGTGGCAAAGGTGCAGCCATGGTGACAGCAGTGGCTTACCGGCTGGCCGATCAACA
CCGTGCCCGCCAGAAGACATTAGAGCATCTGCAGCTGAGCCATGACCAGCTGCTGGAGGTCAAGAGGAGG
ATGAAGGTAGAAATGGAGCGAGGTCTGAGCAAGGAGACTCATGCCAGTGCCCCCGTCAAGATGCTGCCCA
CCTACGTGTGTGCTACCCCGGACGGCACAGAGAAAGGGGACTTCTTGGCCTTGGACCTTGGAGGAACAAA
TTTCCGGGTCCTGCTGGTCCGTGTTCGGAATGGGAAGTGGGGTGGAGTGGAGATGCACAACAAGATCTAC
GCCATCCCGCAGGAGGTCATGCACGGCACCGGGGACGAGCTCTTTGACCACATTGTCCAGTGCATCGCGG
ACTTCCTCGAGTACATGGGCATGAAGGGCGTGTCCCTGCCTCTGGGTTTTACCTTCTCCTTCCCCTGCCA
GCAGAACAGCCTGGACGAGAGCATCCTCCTCAAGTGGACAAAAGGCTTCAAGGCATCTGGCTGCGAGGGC
GAGGACGTGGTGACCCTGCTGAAGGAAGCGATCCACCGGCGAGAGGAGTTTGACCTGGATGTGGTTGCTG
TGGTGAACGACACAGTCGGAACTATGATGACCTGTGGCTTTGAAGACCCTCACTGTGAAGTTGGCCTCAT
TGTTGGCACGGGCAGCAATGCCTGCTACATGGAGGAGATGCGCAACGTGGAACTGGTGGAAGGAGAAGAG
GGGCGGATGTGTGTGAACATGGAATGGGGGGCCTTCGGGGACAATGGATGCCTAGATGACTTCCGCACAG
AATTTGATGTGGCTGTGGATGAGCTTTCACTCAACCCCGGCAAGCAGAGGTTCGAGAAAATGATCAGTGG
AATGTACCTGGGTGAGATTGTCCGTAACATTCTCATCGATTTCACCAAGCGTGGACTACTCTTCCGAGGC
CGCATCTCAGAGCGGCTCAAGACAAGGGGCATCTTTGAAACCAAGTTCTTGTCTCAGATTGAGAGTGACT
GCCTGGCCCTGCTGCAAGTCCGAGCCATCCTGCAACACTTAGGGCTTGAGAGCACCTGTGACGACAGCAT
CATTGTTAAGGAGGTGTGCACTGTGGTGGCCCGGCGGGCAGCCCAGCTCTGTGGCGCAGGCATGGCCGCT
GTGGTGGACAGGATACGAGAAAACCGTGGGCTGGACGCTCTCAAAGTGACAGTGGGTGTGGATGGGACCC
TCTACAAGCTACATCCTCACTTTGCCAAAGTCATGCATGAGACAGTGAAGGACCTGGCTCCGAAATGTGA
TGTGTCTTTCCTGCAGTCAGAGGATGGCAGCGGGAAGGGGGCGGCGCTCATCACTGCTGTGGCCTGCCGC
ATCCGTGAGGCTGGACAGCGA

ACGCGTACGCGGCCGCTCGAGCAGAAACTCATCTCAGAAGAGGATCTGGCAGCAAATGATATCCTGGATT
ACAAGGATGACGACGATAAGGTTTAA

Protein Sequence:

>RC209482 representing NM_000189
Red=Cloning site Green=Tags(s)

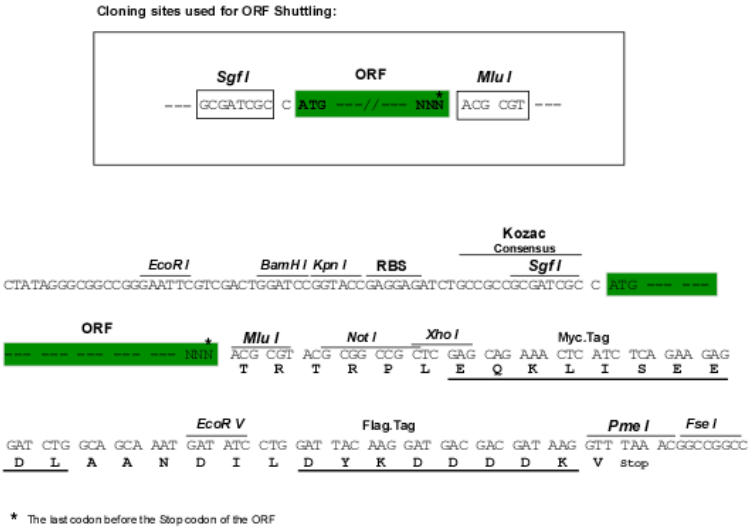
MIASHLLAYFFTELNHDQVQKVDQYLYHMRLSDETLLEISKRFRKEMEKGLGATTHPTAAVKMLPTFVRS
TPDGTEHGEFLALDLGGTNFRVLWVKVTDNGLQKVEMENQIYAIPEDIMRGSGTQLFDHIAECLANFMDK
LQIKDKKLPLGFTFSFPCHQTKLDESFLVSWTKGFKSSGVEGRDVVALIRKAIQRRGDFDIDIVAVVNDT
VGTMMTCGYDDHNCEIGLIVGTGSNACYMEEMRHIDMVEGDEGRMCINMEWGAFGDDGSLNDIRTEFDQE
IDMGSLNPGKQLFEKMISGMYMGELVRLILVKMAKEELLFGGKLSPELLNTGRFETKDISDIEGEKDGIR
KAREVLMRLGLDPTQEDCVATHRICQIVSTRSASLCAATLAAVLQRIKENKGEERLRSTIGVDGSVYKKH
PHFAKRLHKTVRRLVPGCDVRFLRSEDGSGKGAAMVTAVAYRLADQHRARQKTLEHLQLSHDQLLEVKRR
MKVEMERGLSKETHASAPVKMLPTYVCATPDGTEKGDFLALDLGGTNFRVLLVRVRNGKWGGVEMHNKIY
AIPQEVMHGTGDELFDHIVQCIADFLEYMGMKGVSLPLGFTFSFPCQQNSLDESILLKWTKGFKASGCEG
EDVVTLLKEAIHRREEFDLDVVAVVNDTVGTMMTCGFEDPHCEVGLIVGTGSNACYMEEMRNVELVEGEE
GRMCVNMEWGAFGDNGCLDDFRTEFDVAVDELSLNPGKQRFEKMISGMYLGEIVRNILIDFTKRGLLFRG
RISERLKTRGIFETKFLSQIESDCLALLQVRAILQHLGLESTCDDSIIVKEVCTVVARRAAQLCGAGMAA
VVDRIRENRGLDALKVTVGVDGTLYKLHPHFAKVMHETVKDLAPKCDVSFLQSEDGSGKGAALITAVACR
IREAGQR

TRTRPLEQKLISEEDLAANDILDYKDDDDKV

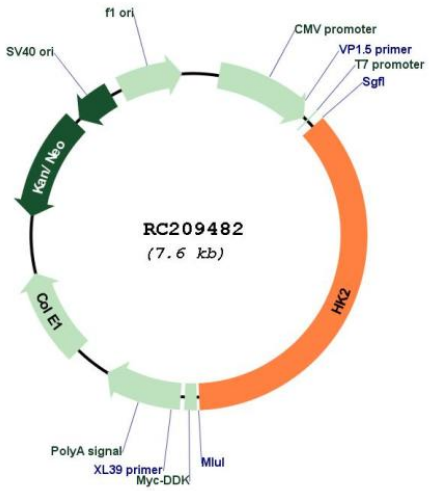
Chromatograms: https://cdn.origene.com/chromatograms/mg2453_c09.zip

Restriction Sites: SgfI-MluI

Cloning Scheme:



Plasmid Map:



ACCN: NM_000189

ORF Size: 2751 bp

OTI Disclaimer: Due to the inherent nature of this plasmid, standard methods to replicate additional amounts of DNA in E. coli are highly likely to result in mutations and/or rearrangements. Therefore, OriGene does not guarantee the capability to replicate this plasmid DNA. Additional amounts of DNA can be purchased from OriGene with batch-specific, full-sequence verification at a reduced cost. Please contact our customer care team at custsupport@origene.com or by calling 301.340.3188 option 3 for pricing and delivery.

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

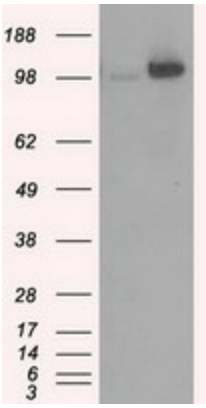
OTI Annotation: This clone was engineered to express the complete ORF with an expression tag. Expression varies depending on the nature of the gene.

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).

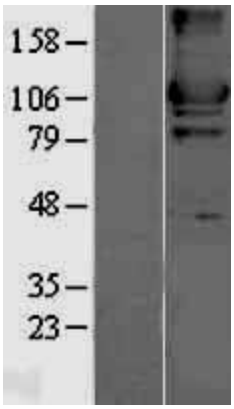
Reconstitution Method:
1. Centrifuge at 5,000xg for 5min.
2. Carefully open the tube and add 100ul of sterile water to dissolve the DNA.
3. Close the tube and incubate for 10 minutes at room temperature.
4. Briefly vortex the tube and then do a quick spin (less than 5000xg) to concentrate the liquid 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_000189.5
RefSeq Size:	7109 bp
RefSeq ORF:	2754 bp
Locus ID:	3099
UniProt ID:	P52789
Cytogenetics:	2p12
Domains:	hexokinase
Protein Families:	Druggable Genome
Protein Pathways:	Amino sugar and nucleotide sugar metabolism, Fructose and mannose metabolism, Galactose metabolism, Glycolysis / Gluconeogenesis, Insulin signaling pathway, Metabolic pathways, Starch and sucrose metabolism, Type II diabetes mellitus
MW:	102.2 kDa
Gene Summary:	Hexokinases phosphorylate glucose to produce glucose-6-phosphate, the first step in most glucose metabolism pathways. This gene encodes hexokinase 2, the predominant form found in skeletal muscle. It localizes to the outer membrane of mitochondria. Expression of this gene is insulin-responsive, and studies in rat suggest that it is involved in the increased rate of glycolysis seen in rapidly growing cancer cells. [provided by RefSeq, Apr 2009]

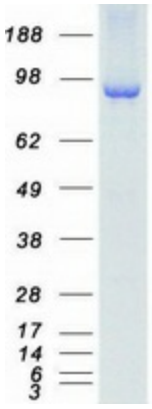
Product images:



HEK293T cells were transfected with the pCMV6-ENTRY control (Cat# [PS100001], Left lane) or pCMV6-ENTRY HK2 (Cat# RC209482, 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-HK2(Cat# [TA500856]). Positive lysates [LY400068] (100ug) and [LC400068] (20ug) can be purchased separately from OriGene.



Western blot validation of overexpression lysate (Cat# [LY400068]) using anti-DDK antibody (Cat# [TA50011-100]). Left: Cell lysates from un-transfected HEK293T cells; Right: Cell lysates from HEK293T cells transfected with RC209482 using transfection reagent MegaTran 2.0 (Cat# [TT210002]).



Coomassie blue staining of purified HK2 protein (Cat# [TP309482]). The protein was produced from HEK293T cells transfected with HK2 cDNA clone (Cat# RC209482) using MegaTran 2.0 (Cat# [TT210002]).