

Product datasheet for **RC222200**

Kv1.2 (KCNA2) (NM_004974) Human Tagged ORF Clone

Product data:

Product Type:	Expression Plasmids
Product Name:	Kv1.2 (KCNA2) (NM_004974) Human Tagged ORF Clone
Tag:	Myc-DDK
Symbol:	KCNA2
Synonyms:	DEE32; EIEE32; HBK5; HK4; HUKIV; KV1.2; MK2; NGK1; RBK2
Mammalian Cell Selection:	Neomycin
Vector:	pCMV6-Entry (PS100001)
E. coli Selection:	Kanamycin (25 ug/mL)



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ORF Nucleotide Sequence:

>RC222200 representing NM_004974
 Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC
 GCC**CGCATCGCC**

ATGACAGTGGCCACCGAGACCCAGCAGACGAGGCTGCTGCCCTCCCTGGCACCCACAGGACACCTATG
 ACCCAGAGGCAGACCACGAGTGCTGTGAGAGGGTGGTGATCAACATCTCAGGGCTGCGGTTTGAGACCCA
 GCTAAAGACCTTAGCCAGTTTCCAGAGACCCTTAGGGGACCCAAAGAAACGAATGAGGTACTTTGAC
 CCCCTCCGGAATGAGTACTTTTTCGATCGGAACCGCCCTAGCTTTGATGCCATTTTGTACTACTACCAGT
 CAGGGGGCCGATTGAGGCGACCTGTGAATGTGCCCTTAGATATATTCTCTGAAGAAATTCGGTTTTATGA
 GCTGGGAGAAGAAGCGATGGAGATGTTTCGGAAGATGAAGGCTACATCAAGGAGGAAGAGCGTCTCTG
 CCTGAAAATGAGTTTCAGAGACAAGTGTGGCTTCTTTGAATACCCAGAGAGCTCAGGGCTGCCAGGA
 TTATAGCTATTGTGTCTGTCATGGTATTCTGATCTCAATTGTCAGCTTCTGTCTGGAAACATTGCCAT
 CTTCCGGGATGAGAATGAAGACATGCATGGTAGTGGGTGACCTCCACACCTATTCCAACAGCACCATC
 GGGTACCAGCAGTCCACTTCTTCCAGACCCTTCTTTCATTGTAGAGACTCTGCATCATCTGGTTCT
 CCTTTGAATTCCTGGTGAGGTTCTTTCCTGTCCAGCAAAGCCGGCTTCTTACCAACATCATGAACAT
 CATTGACATTGTGGCCATCATCCCTACTTTCATCACCTGGGGACAGAGTTGGCTGAGAAGCCAGAGGAC
 GCTCAGCAAGGCCAGCAGGCCATGTCACTGGCCATCCTCCGTGTCATCCGGTTGGTAAGAGTCTTTAGGA
 TTTTCAAGTTGTCCAGACTCCAAAGGCTCCAGATTCTAGGTGAGACCCTCAAAGCCAGCATGAGAGA
 ATGGGCTCCTGATATCTTCTTTCATAGGGGTATCCTTTTCTCTAGTGTGTGATTTTGCAGAG
 GCCGATGAGCGAGAGTCCAGTTCAGCATCCAGATGCCTTCTGGTGGCAGTGTCTCCATGACAA
 CTGTAGGCTATGGAGACATGGTTCGACTACCATTGGGGAAAGATAGTGGGTTCCCTATGTGCGATTGC
 AGGTGTGTTAACTATTGCCTTACCGTCCCTGTCAATTGTGTCGAATTTCACTACTTCTACCACCGGGAG
 ACAGAGGGAGAGGAACAGGCCAACTTGAAGTGACAAGCTGTCCAAAGATCCCATCCTCCCCTGACC
 TAAAGAAAAGTAGAAGTGCCTCTACCATTAGTAAGTCTGATTACATGGAGATCCAGGAGGTGTAATAA
 CAGTAATGAGGACTTTAGAGAGGAAAATTGAAAACAGCCAAGTACCTTGCTAACACAACTATGTG
 AATATTACCAAAATGTTAACTGATGTC

ACGCGTACGCGGCCGCTCGAGCAGAACTCATCTCAGAAGAGGATCTGGCAGCAAATGATATCTGGATT
 ACAAGGATGACGACGATAAGGTTTAA

Protein Sequence:

>RC222200 representing NM_004974
 Red=Cloning site Green=Tags(s)

MTVATGDPADAAAALPGHPQDITYDPEADHECCERVVINISGLRFETQLKTLAQFPETLLGDPKKRMRYFD
 PLRNEYFFDRNRPSFDAILYYYSQGGRLRRPVNVPLDIFSEEIRFYELGEEAMEMFREDEGYIKEEERPL
 PENEFRQVWLLFEYPESGPARIIAIVSVMVILISIVSFCLETLPFRDENEDMHGSGVTFHTYSNSTI
 GYQSTSFDPFFIVETLCIIWFSFEFLVRFACPSKAGFFTNIMNIIDIVAIIPYFITLGTLEAKPED
 AQQGQQAAMSLAILRVIRLVRFVFRIFKLSRHSKGLQILGQTLKASMRELGLLIFFLFIGVILFSSAVYFAE
 ADERESQFPSIPDAFWAVVSMTTVGYGDMVPTTIGGKIVGSLCAIAGVLTIALPVPVIVSNFNFYHRE
 TEGEEQAQYLQVTSCPPIPSSPDLKKSRSASTISKSDYMEIQEGVNSNEDFRENLKTANCTLANTNYV
 NITKMLTDV

TRTRPLEQKLISEEDLAANDILDYKDDDDKV

Chromatograms:

https://cdn.origene.com/chromatograms/mk6117_e01.zip

Restriction Sites:

Sgfl-Mlul

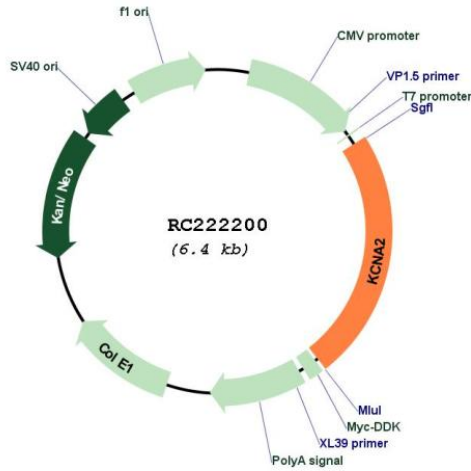
Cloning Scheme:

Cloning sites used for ORF Shutting:



* The last codon before the Stop codon of the ORF

Plasmid Map:



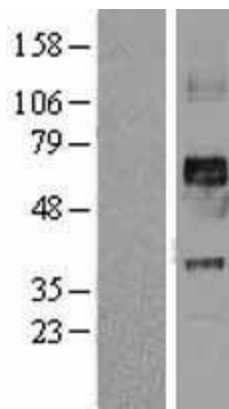
ACCN:

NM_004974

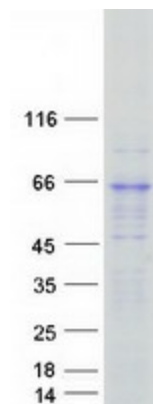
ORF Size:	1497 bp
OTI Disclaimer:	<p>Due to the inherent nature of this plasmid, standard methods to replicate additional amounts of DNA in E. coli are highly likely to result in mutations and/or rearrangements. Therefore, OriGene does not guarantee the capability to replicate this plasmid DNA. Additional 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.</p> <p>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</p>
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:	<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_004974.4
RefSeq Size:	2142 bp
RefSeq ORF:	1500 bp
Locus ID:	3737
UniProt ID:	P16389
Cytogenetics:	1p13.3
Protein Families:	Druggable Genome, Ion Channels: Potassium, Transmembrane
MW:	56.5 kDa

Gene Summary:

Potassium channels represent the most complex class of voltage-gated ion channels from both functional and structural standpoints. Their diverse functions include regulating neurotransmitter release, heart rate, insulin secretion, neuronal excitability, epithelial electrolyte transport, smooth muscle contraction, and cell volume. Four sequence-related potassium channel genes - shaker, shaw, shab, and shal - have been identified in *Drosophila*, and each has been shown to have human homolog(s). This gene encodes a member of the potassium channel, voltage-gated, shaker-related subfamily. This member contains six membrane-spanning domains with a shaker-type repeat in the fourth segment. It belongs to the delayed rectifier class, members of which allow nerve cells to efficiently repolarize following an action potential. The coding region of this gene is intronless, and the gene is clustered with genes KCNA3 and KCNA10 on chromosome 1. [provided by RefSeq, Jul 2008]

Product images:

Western blot validation of overexpression lysate (Cat# [LY401550]) using anti-DDK antibody (Cat# [TA50011-100]). Left: Cell lysates from untransfected HEK293T cells; Right: Cell lysates from HEK293T cells transfected with RC222200 using transfection reagent MegaTran 2.0 (Cat# [TT210002]).



Coomassie blue staining of purified KCNA2 protein (Cat# [TP322200]). The protein was produced from HEK293T cells transfected with KCNA2 cDNA clone (Cat# RC222200) using MegaTran 2.0 (Cat# [TT210002]).