

Product datasheet for **MR209597**

Kcnd2 (NM_019697) Mouse Tagged ORF Clone

Product data:

Product Type:	Expression Plasmids
Product Name:	Kcnd2 (NM_019697) Mouse Tagged ORF Clone
Tag:	Myc-DDK
Symbol:	Kcnd2
Synonyms:	AI839615; AW555701; Kv4.2; mKIAA1044; R75121
Mammalian Cell Selection:	Neomycin
Vector:	pCMV6-Entry (PS100001)
E. coli Selection:	Kanamycin (25 ug/mL)



[View online »](#)

ORF Nucleotide Sequence:

>MR209597 ORF sequence
 Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGGAATTCGTGACTGGATCCGGTACCGAGGAGATCTGCC
 GCC**CGCATCGCC**

ATGGCAGCCGGTGTTCAGCATGGCTGCCCTTTGCCAGGGCAGCCGCATTGGGTGGATGCCTGTTGCTT
 CGGGCCATATGCCTGCGCCCAAGACAGGAGAGAAAAAGGACTCAGGACGCTCTGATAGTGCTGAACGT
 GAGTGGCACCCGTTTCCAGACATGGCAAGACACCTGGAACGATACCCAGACACTCTGCTGGTAGTTCT
 GAGAGAGACTTTTTCTACCACCCAGAGACCCAACAATACTTCTTTGACCGTGACCCGGACATCTCCGCC
 ACATCCTCAACTTCTACCGCACGGGAAGCTTCACTATCCCCGCCATGAGTGCATCTCGGCTTATGATGA
 AGAACTGGCCTTCTTTGGCCTCATCCAGAAATATTGGCGACTGCTGTTATGAGGAGTACAAGGACCGC
 AGGCGGGAGAATGCTGAGCGCTCCAGGATGATGCAGACACTGACAATACAGGAGAGAGTGCCTGCCCA
 CCATGACTGCTAGGCAGAGGGTCTGGCGGGCCTTTGAGAATCCCCACACCAGCACCATGGCCTGGTGT
 TACTATGTGACTGGGTTCTTCATTGCCGTCTCAGTCATCGGAATGTGGTGGAAACAGTCCATGTGGG
 TCTAGCCAGGCCACATAAAAGAACTGCCTTGTGGGGAGAGGTATGCGGTGGCCTTCTTCTGCTTGATA
 CCGCCTGTGTCATGATCTTCACAGTTGAGTACTTGCCTCGCCTGGCCGACACCTAGTCGTTACCGTTT
 CGTGCGCAGTGTGATGATATCATCGACGTGGTGGCCATCCTACCCTATTACATTGGGCTGGTATGACA
 GACAATGAGGATGTCAGTGGAGCCTTTGTCACTCCGAGTCTTCGAGTCTTCAGGATCTTAAAGTTTT
 CCCGCCACTCTCAAGGGCTGCGTATACTGGGGTACACCCTGAAGAGCTGTGCATCAGAAGTGGGCTTCT
 GCTCTTTCTCTACAATGGCTATCATATTTTCGCTACCGTTATGTTCTACGCAGAGAAGGGCTCTTCA
 GCAAGCAAGTTCACCAGCATCCCGCAGCCTTCTGGTACACCATCGTACCATGACAACACTGGGGTATG
 GCGACATGGTACCAAAAACCATAGCAGGGAAGATTTTTGGTCCATCTGCTCACTGAGCGGAGTCTGGT
 CATTGCGCTACCCGTGCCTGTGATCGTGTGCAACTTCAGTCGGATCTACCACCAAAACCAACGAGCAGAC
 AAACGAAGGGCACAGAAGAAAGCCAGGCTGGCCAGGATCCGAGCAGCAAAAGCGGGAGTCAAATGCCT
 ACATGCAGAGCAAGCGGAATGGGCTACTGAGCAACCAGCTGCAGTCTCGGAGGATGAACCGGCCTTCAT
 AAGCAAATCTGGATCCAGCTTTGAGACACAGCACCACCACCTGCTTCACTGCCTGGAGAAAACACGAAC
 CATGAGTTTGTGATGAACAAGTCTTTGAAGAAAGCTGCATGGAAGTGGCACCGTCAATCGCCATCAA
 GTCACAGTCCCTCTCTCTCTCACAAACAGGAGTACCAGCACTGCTGCTCACGGAGACACAAAAGAC
 TTTCCGATTCTAATGCCAATGTGTCGGGAAGCCATAGAGGCAGTGTGCAAGAAGTCAATACAATTCAG
 ATCAGATGTGTGGAGAGAACTCCACTATCCAACAGCCGATCCAGCTTAAATGCCAAAATGGAAGAGTGTG
 TTAAACTAACTGTGAACAACCTTACGTGACCACAGCAATAATAAGCATCCCAACACCTCCAGTAACCAC
 CCCAGAAGGGCAGCAGAGCCCGAGTCTCTGAGTATTCCGGGAGGAAATATCGTCAGGGTGTCTGCCTTG

ACGCGTACGCGGCCGCTCGAGCAGAAACTCATCTCAGAAGAGGATCTGGCAGCAAATGATATCCTGGATT
 ACAAGGATGACGACGATAAGGTTTAA

Protein Sequence:

>MR209597 protein sequence
 Red=Cloning site Green=Tags(s)

MAAGVAAWLPFARAAAIGWMPVASGMPAPPRQERKRTQDALIVLNVSGRFQWTWQDTLERYPDLLGSS
 ERDFFYHPETQQYFFDRDPDIFRHILNFYRTGKLHYPRHECISAYDEELAFFGLIPEIIGDCCYEEYKDR
 RRENAERLQDDADTNTGESALPTMTARQRVWRAFENPHTSTMALVFYYVTGFFIAVSVIANVVETVPCG
 SSPGHIKELPCGERYAVAFFCLDTACVMIFTVEYLLRLAAAPSRYRFVRSVMSIIDVVAILPYYIGLVMT
 DNEDVSGAFVTLRVFRVFRIFKFSRHSQGLRILGYTLKSCASELGFLFSLTMAIIFATVMFYAEKGSS
 ASKFTSIPAAFYTYIVTMTTLGYGDMVPKTIAGKIFGSI CSLSGVLVIALPVPVIVSNFSRIYHQQRAD
 KRRAQKKARLARIRAAKSGSANAYMQSKRNGLLSNQLQSSSEDEPAFISKSGSSFETQHHLLHCLEKTTN
 HEFVDEQVFEESCMEVATVNRPSSHSPSLSSQQGVTSTCCSRRHKKTFRIPNANVSGSHRGSVQELSTIQ
 IRCVERTPLSNSRSSLNAKMEECVKLNCEQPYVTTAIIISIPPPVTTPEGDDRPESPEYSGGNIVRVSAL

TRTRPLEQKLISEEDLAANDILDYKDDDDKV

Restriction Sites: SgfI-MluI

Cloning Scheme:



ACCN: NM_019697

ORF Size: 1893 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_019697.4](#)

RefSeq Size: 4562 bp

RefSeq ORF: 1893 bp

Locus ID: 16508

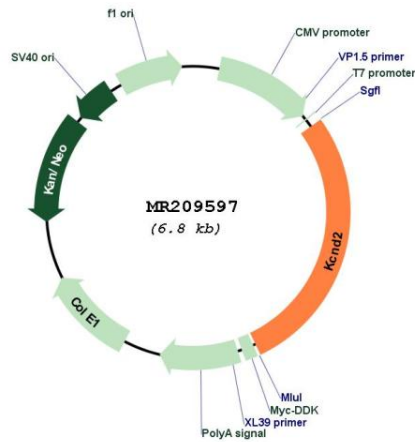
UniProt ID: [Q9Z0V2](#)

Cytogenetics: 6 8.49 cM

MW: 70.6 kDa

Gene Summary: Voltage-gated potassium channel that mediates transmembrane potassium transport in excitable membranes, primarily in the brain, but also in rodent heart. Mediates the major part of the dendritic A-type current I(SA) in brain neurons (PubMed:10818150, PubMed:17122039, PubMed:18045912, PubMed:18187474, PubMed:20371829, PubMed:22815518). This current is activated at membrane potentials that are below the threshold for action potentials. It regulates neuronal excitability, prolongs the latency before the first spike in a series of action potentials, regulates the frequency of repetitive action potential firing, shortens the duration of action potentials and regulates the back-propagation of action potentials from the neuronal cell body to the dendrites (PubMed:10818150, PubMed:17122039, PubMed:22815518). Contributes to the regulation of the circadian rhythm of action potential firing in suprachiasmatic nucleus neurons, which regulates the circadian rhythm of locomotor activity (PubMed:22815518). Functions downstream of the metabotropic glutamate receptor GRM5 and plays a role in neuronal excitability and in nociception mediated by activation of GRM5 (PubMed:18045912). Mediates the transient outward current I(to) in rodent heart left ventricle apex cells, but not in human heart, where this current is mediated by another family member (PubMed:9734479, PubMed:10601491, PubMed:11909823, PubMed:23713033). Forms tetrameric potassium-selective channels through which potassium ions pass in accordance with their electrochemical gradient. The channel alternates between opened and closed conformations in response to the voltage difference across the membrane (PubMed:9734479, PubMed:22311982). Can form functional homotetrameric channels and heterotetrameric channels that contain variable proportions of KCND2 and KCND3; channel properties depend on the type of pore-forming alpha subunits that are part of the channel (PubMed:11909823). In vivo, membranes probably contain a mixture of heteromeric potassium channel complexes (PubMed:11909823). Interaction with specific isoforms of the regulatory subunits KCNIP1, KCNIP2, KCNIP3 or KCNIP4 strongly increases expression at the cell surface and thereby increases channel activity; it modulates the kinetics of channel activation and inactivation, shifts the threshold for channel activation to more negative voltage values, shifts the threshold for inactivation to less negative voltages and accelerates recovery after inactivation (By similarity). Likewise, interaction with DPP6 or DPP10 promotes expression at the cell membrane and regulates both channel characteristics and activity (PubMed:22311982).[UniProtKB/Swiss-Prot Function]

Product images:



Circular map for MR209597