

Product datasheet for **MC220043**

Kcnc2 (NM_001025581) Mouse Untagged Clone

Product data:

Product Type:	Expression Plasmids
Product Name:	Kcnc2 (NM_001025581) Mouse Untagged Clone
Tag:	Tag Free
Symbol:	Kcnc2
Synonyms:	AW047325; B230117I07; KShIIIA; Kv3.2
Vector:	pCMV6-Entry (PS100001)
E. coli Selection:	Kanamycin (25 ug/mL)
Cell Selection:	Neomycin



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Fully Sequenced ORF: >MC220043 representing NM_001025581
 Red=Cloning site Blue=ORF Orange=Stop codon

TTTTGTAATACGACTCACTATAGGGCGGCCGGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC
 GCC**CGGATCGCC**

ATGGGCAAGATCGAGAGCAACGAGAGGGTGATCCTCAATGTCGGGGGTACCAGGCACGAAACCTACCGCA
 GCACCCTCAAGACCCTGCCTGGAACCTCGCTGGCCCTTCTTGCCTCCTCTGAACCTCAGGGCGACTGCCT
 GACTGCGGCCGGGGACAAGCTGCAACCGCTGCCCCCTCCGCTGTCTCCGCGGCCACGACCGCCTCCCTTG
 TCCCTGTCCCCAGCGGCTGCTTCGAGGGCGGCGCAGGCAACTGCAGTTCGCACGGTGGCAACGCGGGCA
 ACGGGCGCAGCGACCACCCTGGGGAGGCCGGAATTCTTCTTCGATCGCCACCCAGGAGTATTCGCTA
 TGTGCTCAATTACTACCGCACGGGCAAGCTGCACTGCCCGCCGACGTGTGCGGGCCGCTCTTCGAGGAA
 GAGCTGGCTTTCTGGGCATCGATGAGACCACGTGGAGCCCTGTGCTGGATGACCTACAGGCAGCACC
 GGGACCGGAGGAGGCCCTGGACATCTTTGAGACACCCGACCTCATCGGGGGCACCCTGGTATGATGA
 GGACCTAGCGGCCAAGAGATTGGGCAATTGAGGATGCTGCGGGGCTGGGAGACCCGATGGCAAGTCAGGC
 CGCTGGAGGAAGCTGCAGCCTCGCATGTGGGCTCTTTTGGAGACCCCTACTCATCTAGAGCCGCTAGGT
 TTATTGCTTTTGCTTCTTTGTTCTTCAATTTGGTTCCATCACAACCTTTTGCCTGGAGACACATGAAGC
 TTTCAATATTGTTAAAAACAAGACGGAGCCCGTCATCAATGGCACCAGCCGGTCTCCAGTACGAAATC
 GAAACGGATCCC GCCCTGACGTACGTGGAAGGAGTATGTGTGGTGTGTTTACGTTTGAATTTTGTAGTCC
 GAATTGTTTTCTACCCAATAAACTTGAATTCATCAAAAATCTCTTGAACATCATTGACTTTGTGGCCAT
 CCTCCCCTTCTACCTAGAGGTGGGACTCAGCGGGCTGTCTCCAAAGCGGCCAAAGATGTGCTCGGCTTT
 CTCAGGGTGGTTAGGTTTGTGAGGATCCTGAGAATCTTCAAGCTCACCCGCCATTTGCTAGGTCTGAGGG
 TGCTCGGACATACTCTTCGGGCGAGCACCAACGAATTTTGTGCTGATCATCTTCTGGCGCTGGGAGT
 TTTGATATTCGCTACGATGATCTACTACGCTGAGAGAGTAGGGGCTCAGCCCAATGACCCTTCAGCTAGT
 GAGCACACGCAGTTCAAAAACATCCCCATTGGTTTCTGGTGGGCCGTAGTGACCATGACTACCTTAGGTT
 ACGGGGATATGTACCCCAAAACATGGTCAGGGATGTTGGTGGGGCCTTGTGTCCCTGGCCGGAGTGT
 GACAATAGCCATGCCTGTGCCTGTCAATGTCAACAATTTTGAATGTAATACTCCTTGGCAATGGCGAAG
 CAGAAACTTCCAAGAAAGAGAAAGAAGCATATTCCTCCTGCCCTCTGGCAAGCTCGCTACATTTTGA
 AGACAGAATTGAACATGGCTTGAACAGTACCCAGAGTACACATGTCTGGGCAAGAAAACCGGCTTCT
 GGAACATAACAGATCAGTGTATCAGGTGACGACAGTACAGGAAGTGGCCGCCATTATCACCTCCAGAA
 AGGCTCCCTATCAGACGCTCTAGTACCAGAGACAAAACAGAAGAGGGGAAACGTGTTTCTGTTGACGA
 CAGGTGATTACAGTGGCCTTCTGATGGAGGAATCAGGAAAGCAAGCACACTAGAGCCCATGGAGAGTAC
 TGACAGACTAAAGGAGACACAAGACCAGAAGCTCATTGGAATTGTGCGCACTTACTCAATTTTGGGTGT
 CCTACAGGAAGTTCATTTCCACCCTC**TAA**

ACGCGTACGCGGCCGCTCGAGCAGAAACTCATCTCAGAAGAGGATCTGGCAGCAATGATATCCTGGATT
 ACAAGGATGACGACGATAAGGTTTAA

Restriction Sites: SgfI-MluI

ACCN: NM_001025581

Insert Size: 1920 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).

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_001025581.1](#), [NP_001020752.1](#)

RefSeq Size: 6196 bp

RefSeq ORF: 1920 bp

Locus ID: 268345

Cytogenetics: 10 60.3 cM

Gene Summary:

Voltage-gated potassium channel that mediates transmembrane potassium transport in excitable membranes, primarily in the brain. Contributes to the regulation of the fast action potential repolarization and in sustained high-frequency firing in neurons of the central nervous system (PubMed:10561420, PubMed:10414303, PubMed:11124984, PubMed:10903572, PubMed:11506885, PubMed:15317859, PubMed:15917463, PubMed:17761775, PubMed:21414897). Homotetramer channels mediate delayed-rectifier voltage-dependent potassium currents that activate rapidly at high-threshold voltages and inactivate slowly (PubMed:10414303). Forms tetrameric 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 (By similarity). Can form functional homotetrameric and heterotetrameric channels that contain variable proportions of KCNC1, and possibly other family members as well; channel properties depend on the type of alpha subunits that are part of the channel (PubMed:10531438, PubMed:12000114). Channel properties may be modulated by either the association with ancillary subunits, such as KCNE1, KCNE2 and KCNE3 or indirectly by nitric oxide (NO) through a cGMP- and PKG-mediated signaling cascade, slowing channel activation and deactivation of delayed rectifier potassium channels (By similarity). Contributes to fire sustained trains of very brief action potentials at high frequency in thalamocortical and suprachiasmatic nucleus (SCN) neurons, in hippocampal and neocortical interneurons and in retinal ganglion cells (PubMed:10561420, PubMed:10903572, PubMed:11506885, PubMed:17761775). Sustained maximal action potential firing frequency in inhibitory hippocampal interneurons is negatively modulated by histamine H2 receptor activation in a cAMP- and protein kinase (PKA) phosphorylation-dependent manner (PubMed:10903572). Plays a role in maintaining the fidelity of synaptic transmission in neocortical GABAergic interneurons by generating action potential (AP) repolarization at nerve terminals, thus reducing spike-evoked calcium influx and GABA neurotransmitter release (PubMed:15917463). Required for long-range synchronization of gamma oscillations over distance in the neocortex (PubMed:22539821). Contributes to the modulation of the circadian rhythm of spontaneous action potential firing in suprachiasmatic nucleus (SCN) neurons in a light-dependent manner (PubMed:21414897).[UniProtKB/Swiss-Prot Function]