

Product datasheet for **MG216588**

Kcnc2 (NM_001025581) Mouse Tagged ORF Clone

Product data:

Product Type:	Expression Plasmids
Product Name:	Kcnc2 (NM_001025581) Mouse Tagged ORF Clone
Tag:	TurboGFP
Symbol:	Kcnc2
Synonyms:	AW047325; B230117I07; KShIIIA; Kv3.2
Mammalian Cell Selection:	Neomycin
Vector:	pCMV6-AC-GFP (PS100010)
E. coli Selection:	Ampicillin (100 ug/mL)



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ORF Nucleotide Sequence:

>MG216588 representing NM_001025581
 Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC
 GCC**CGCATCGCC**

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 CCTACAGGAAGTTCATTTCCACCCCTC

ACGCGTACGCGGCCGCTCGAG - GFP Tag - GTTTAA

Protein Sequence:

>MG216588 representing NM_001025581
 Red=Cloning site Green=Tags(s)

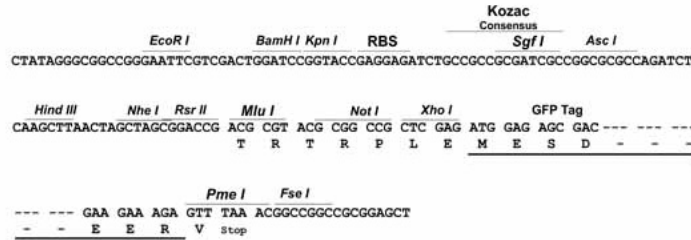
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TRTRPLE - GFP Tag - V

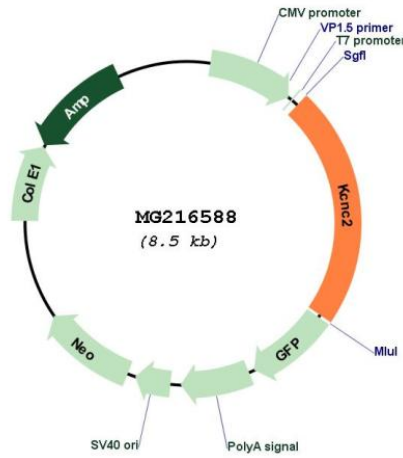
Restriction Sites: Sgfl-MluI

Cloning Scheme:

Cloning sites used for ORF Shutting:



Plasmid Map:



ACCN: NM_001025581

ORF Size: 1917 bp

OTI Disclaimer:	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:	<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_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]