

Product datasheet for **MG209902**

Kcnq1 (BC045142) Mouse Tagged ORF Clone

Product data:

Product Type:	Expression Plasmids
Product Name:	Kcnq1 (BC045142) Mouse Tagged ORF Clone
Tag:	TurboGFP
Symbol:	Kcnq1
Synonyms:	AW559127; Kcna9; KVLQT1
Mammalian Cell Selection:	Neomycin
Vector:	pCMV6-AC-GFP (PS100010)
E. coli Selection:	Ampicillin (100 ug/mL)



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ORF Nucleotide
Sequence:

>MG209902 representing BC045142
Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC
GCCGCGATCGCC

ATGGACACGGCCTCGTCCCCGCCAGTGTGAAAGGAAGCGCGGGTTGGAGCCGCTGCTAGGCGCCC
GGCGGGCAGCGCGGTGGTCAAGAAGTGTCCCTTCTCACTGGAGCTGGCCGAAGGTGGCCCTGAGGGCAG
CACGGTCTATGCGCCATCGCGCCAACCGAGCCCCGGGCTCGCGCCCCCATGTGACCCCAAGTGTG
CCCCCCCCGGCCCTGCAGACCTCGGCCACGTCCGCGGGTGTGAGCCTTGACCCGCGGGTCTCCATCTACA
GTGCGCGCCGCCCTGCTGGCGCACCCACATCCAGGGCCGAGTCTACAATTCTCGAGCGCCCCAC
GGTTGGAAGTGTTCGTGTACCACTTACCCTTCTCATTGTTCTGGTCTGCCTCATCTTCAGTGTG
CTGTCCACTATTGAGCAGTATGCCGCTCTGCCACCGGGACCCTTCTGGATGGAGATTGCCTTGTGG
TGTTCTTTGGGACAGAATATGTGGTCCGCTCTGGTCTGCAGGCTGCCGAGCAAGTACGTGGGCATCTG
GGCCCGGTACGTTTTGCCCGGAAGCCATTTCCATCATTGACCTCATCGTGGTTGTAGCCTCTATGGTT
GTCTCTGCGTGGTTCCAAAGGACAAGTGTTCGCCACATCAGCTATCAGGGGTATCCGCTTCTTCAGA
TCTGCGGATGCTGCATGTCGATCGCCAGGGGGTACCTGGAGGCTCCTGGGCTCTGTAGTCTTCATTCA
CCGCCAGGAGCTGATCACCACCCTGTACATTGGCTTTCTGGGCTTATCTTCTCCTCCTACTTTGTCTAC
TTGGGTGAGAAAGATGCGGTGAACGAGTCCGGCCGCATCGAGTTTGGCAGCTACGCAGATGCTCTGTGGT
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CGCTCCTGTTTCTGTCTTCGCCATATCCTTCTTGCAGTCCAGCGGGGATACTTGGCTCTGGGTTCC
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TCCAGACTGCATGGAGGTGCTATGCCGCTGAGAACCCTGACTCAGCCACTTGAAGATCTATGTCCGGAA
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AGGTCATCAGGCGCATGCAGTACTTTGTAGCCAAGAAGAAATCCAGCAAGCACGGAAGCCCTACGACGT
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GTAACACCATCGGTGCCGCTCTGAACAGGGTGAAGACAAGGTGACACAACCTGGACCAGAGACTGGTGT
CATCACAGACATGCTCCACCAGCTGCTGTCCATGCAACAAGGTGGTCCAACCTGCAACAGCAGGTACAA
GTTGTAGCCAGCAATGAAGGTGGCTCCATCAACCTGAGCTTCTCCTACCCAGCAACAGCCTGCCACCT
ACGAACAACCTGACTGTGCCCCAGACAGGCCCTGATGAGGGTTCC

ACGCGTACGCGGGCCGCTCGAG - GFP Tag - GTTTAA

Protein Sequence: >MG209902 representing BC045142
 Red=Cloning site Green=Tags(s)

MDTASSPPSAERKRAGWSRLLGARRGSAVVKKCPFSLELAEGGPEGSTVYAPIAPTAPGLAPPMSTPVS
 PAPAPADLGPRPRVSLDPRVSIYSARRPLLARTHIOGRVYNFLERPTGWKCFVYHFTVFLIVLVCLIFSV
 LSTIEQYAALATGTLFWMEIVLVVFFGTEYVRLWSAGCRSKYVGIWGRLLRFARKPISIIDLIVVASMV
 VLCVGSKGQVFATSAIRGIRFLQILRMLHVDROGGTWRLLGSVFIHRQELITTLTYIGFLGLIFSSYFVY
 LAEKDAVNESGRIEFGSYADALWWGVVTVTTIGYGDVPTWVGKTIASCFVFAISFFALPAGILGSGF
 ALKVQQKQRQKHFNRPAAAAASLIQTAWRCYAAENPDSATWKIYVRKPARSHTLLSPSPKPKKSVMKKK
 KFKLDDKNGMSPGKMFNPHITYDPPEDRRPDHFSIDGYDSSVRKSPPTLLEVSTPHFLRTNSFAEDLDL
 EGETLLTPITHVSQLRDHHRATIKVIRRMQYFVAKKKFQARKPYDVRDVEQYSQGHLLMVRKELQR
 RLDQSIGKPSLFIPISEKSKDRGNTIGARLNRVEDKVTQLDQRLVIITDMLHQLLSMQQGGPTCNSRSQ
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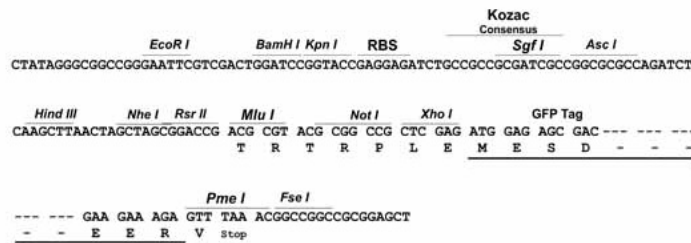
TRTRPLE - GFP Tag - V

Restriction Sites:

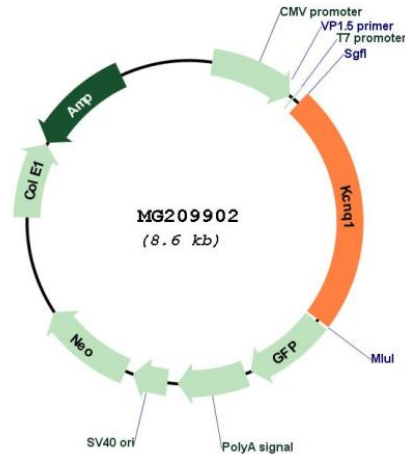
Sgfl-MluI

Cloning Scheme:

Cloning sites used for ORF Shuttling:



Plasmid Map:



ACCN: BC045142

ORF Size: 2006 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:

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: [BC045142](#), [AAH45142](#)

RefSeq Size: 3140 bp

RefSeq ORF: 2006 bp

Locus ID: 16535

Cytogenetics: 7 88.12 cM

Gene Summary: Potassium channel that plays an important role in a number of tissues, including heart, inner ear, stomach and colon (By similarity) (PubMed:16314573, PubMed:11120752, PubMed:15004216). Associates with KCNE beta subunits that modulates current kinetics (By similarity) (PubMed:17597584, PubMed:15004216). Induces a voltage-dependent by rapidly activating and slowly deactivating potassium-selective outward current (By similarity) (PubMed:8900282). Promotes also a delayed voltage activated potassium current showing outward rectification characteristic (By similarity). During beta-adrenergic receptor stimulation participates in cardiac repolarization by associating with KCNE1 to form the I(Ks) cardiac potassium current that increases the amplitude and slows down the activation kinetics of outward potassium current I(Ks) (By similarity) (PubMed:15004216, PubMed:17597584). Muscarinic agonist oxotremorine-M strongly suppresses KCNQ1/KCNE1 current (By similarity). When associated with KCNE3, forms the potassium channel that is important for cyclic AMP-stimulated intestinal secretion of chloride ions (By similarity). This interaction with KCNE3 is reduced by 17beta-estradiol, resulting in the reduction of currents (By similarity). During conditions of increased substrate load, maintains the driving force for proximal tubular and intestinal sodium ions absorption, gastric acid secretion, and cAMP-induced jejunal chloride ions secretion (PubMed:16314573). Allows the provision of potassium ions to the luminal membrane of the secretory canaliculus in the resting state as well as during stimulated acid secretion (PubMed:19491250). When associated with KCNE2, forms an heterooligomer complex leading to currents with an apparently instantaneous activation, a rapid deactivation process and a linear current-voltage relationship and decreases the amplitude of the outward current (By similarity). When associated with KCNE4, inhibits voltage-gated potassium channel activity (By similarity). When associated with KCNE5, this complex only conducts current upon strong and continued depolarization (By similarity). Also forms a heterotetramer with KCNQ5; has a voltage-gated potassium channel activity (By similarity). Binds with phosphatidylinositol 4,5-bisphosphate (By similarity).[UniProtKB/Swiss-Prot Function]