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# Product datasheet for MG220977

## Kcna4 (NM_021275) Mouse Tagged ORF Clone

### Product data:

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|---|---|
| **Product Type:** | Expression Plasmids |
| **Product Name:** | Kcna4 (NM_021275) Mouse Tagged ORF Clone |
| **Tag:** | TurboGFP |
| **Symbol:** | Kcna4 |
| **Synonyms:** | Kv1.4 |
| **Mammalian Cell Selection:** | Neomycin |
| **Vector:** | pCMV6-AC-GFP (PS100010) |
| **E. coli Selection:** | Ampicillin (100 ug/mL) |

**ORF Nucleotide Sequence:**

>MG220977 representing NM_021275
Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC
GCCGCGATCGCC

ATGGAAGTGGCGATGGTGAGTGCCGAGAGCTCAGGGTGCAACAGCCATATGCCTTATGGTTATGCAGCCC
AGGCCAGGGCCCGAGAGCGGGAGAGACTCGCTCACTCCAGGGCAGCTGCAGCTGCTGCTGTCGCAGCTGC
CACGGCTGCTGTCGAAGGCACTGGGGGTTCTGGTGGAGGCCCCCACCACCATCATCAGACACGTGGGGCC
TACTCCTCCCATGATCCTCAAGGTAGCCGTGGAAGTAGAAGGAGGAGGCGTCAGCGAACTGAGAAGAAGA
AACTCCACCACAGGCAGAGCAGTTTTCCTCATTGCTCAGACCTGATGCCCAGTGGCTCTGAAGAGAAGAT
CCTGAGGGAGCTAAGCGAGGAAGAGGAAGACGAGGAGGAGGAAGAGGAGGAGGAGGAGGGAAGGTTT
TACTATAGTGAAGAAGACCATGGGGATGGGTGTTCGTACACAGACCTGCTGCCACAGGATGATGGGGGTG
GTGGCGGCTACAGTTCAGTCCGCTATAGTGACTGCTGTGAACGTGTGGTGATAAATGTGTCTGGTCTACG
CTTCGAAACCCAAATGAAAACTTTGGCCCAGTTTCCAGAAACTCTGTTGGGAGACCCTGAGAAGAGGACT
CAGTACTTCGACCCTTTGCGCAATGAGTATTTTTTTGATCGGAACCGACCCAGCTTTGATGCCATTTTGT
ATTATTACCAGTCAGGAGGCCGCCTGAAGAGACCAGTCAATGTCCCCTTTGATATCTTCACCGAGGAGGT
GAAGTTCTATCAGTTGGGAGAGGAAGCCCTGCTCAAGTTCCGGGAGGATGAGGGCTTTGTGAGAGAAGAG
GAGGACAGGGCTCTGCCAGAAAATGAATTTAAAAAACAGATTTGGCTTCTCTTTGAATATCCAGAGAGTT
CTAGCCCTGCCAGGGGTATAGCCATTGTGTCTGTCCTGGTCATCTTAATCTCTATTGTCATATTTTGCCT
GGAAACCTTGCCGGAGTTCAGGGATGATAGGGACCTTATTATGGCCCTCAGTGCAGGCGGGCACAGCAGA
TTGCTGAATGACACCTCGGCACCCCACCTGGAGAACTCAGGGCACACAATATTCAATGACCCTTTCTTCA
TCGTGGAGACAGTGTGTATTGTGTGGTTTTCCTTTGAGTTTGTGGTTCGATGCTTTGCTTGTCCCAGCCA
AGCACTCTTCTTCAAAAACATCATGAACATCATTGATATCGTCTCCATTTTGCCTTACTTCATCACTCTG
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TTAGGATCATTCGTCTGGTCCGAGTATTCCGGATCTTCAAGCTCTCCAGACACTCCAAAGGCCTGCAGAT
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ATCCTCTTTTCCAGCGCTGTGTATTTTGCAGAGGCGGATGAACCCACTACCCATTTCCAAAGCATTCCAG
ATGCGTTTTGGTGGGCTGTGGTAACCATGACAACTGTGGGCTATGGGGACATGAAGCCCATCACAGTCGG
GGGAAAGATTGTGGGGTCCCTGTGTGCCATTGCGGGTGTCTTAACCATTGCTTTGCCTGTGCCGGTGATT
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CAGTCAGTTGTCCATACCTACCTTCTAATTTGCTCAAGAAATTTCGGAGCTCCACTTCTTCTTCCCTGGG
GGACAAGTCAGAGTATCTAGAGATGGAAGAAGGGGTCAAGGAATCATTATGTGGAAAGGAGGAGAAGTGT
CAGGGAAAGGGAGATGAGAGCGAGACAGATAAAAACAACTGTTCTAATGCAAAGGCTGTGGAGACTGATG
TG

ACGCGTACGCGGCCGCTCGAG - GFP Tag - GTTTAA

**Protein Sequence:**

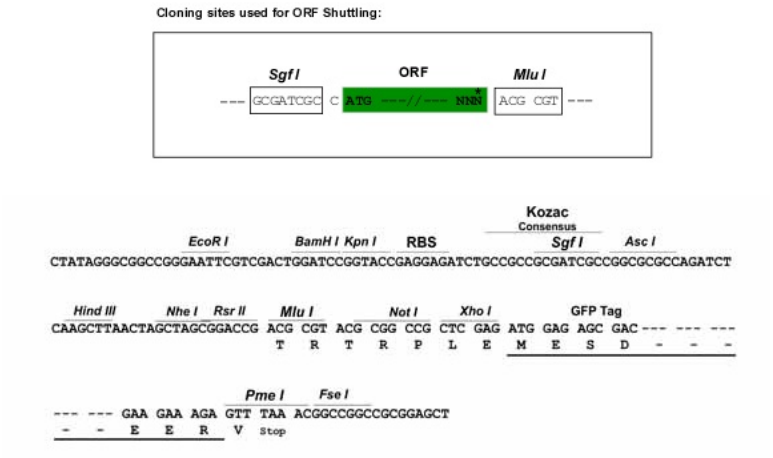
>MG220977 representing NM_021275
Red=Cloning site Green=Tags(s)

MEVAMVSAESSGCNSHMPYGYAAQARARERERLAHSRAAAAAAVAAATAAVEGTGGSGGGPHHHHQTRGA
YSSHDPQGSRGSRRRRRQRTEKKKLHHRQSSFPHCSDLMPSGSEEKILRELSEEEEDEEEEEEEEEGRF
YYSEEDHGDGCSYTDLLPQDDGGGGGYSSVRYSDCCERVVINVSGLRFETQMKTLAQFPETLLGDPEKRT
QYFDPLRNEYFFDRNRPSFDAILYYYQSGGRLKRPVNVPFDIFTEEVKFYQLGEEALLKFREDEGFVREE
EDRALPENEFKKQIWLLFEYPESSSPARGIAIVSVLVILISIVIFCLETLPEFRDDRDLIMALSAGGHSR
LLNDTSAPHLENSGHTIFNDPFFIVETVCIVWFSFEFVVRCFACPSQALFFKNIMNIIDIVSILPYFITL
GTDLAQQQGGGNGQQQQAMSFAILRIIRLVRVFRIFKLSRHSKGLQILGHTLRASMRELGLLIFFLFIGV
ILFSSAVYFAEADEPTTHFQSIPDAFWWAVVTMTTVGYGDMKPITVGGKIVGSLCAIAGVLTIALPVPVI
VSNFNYFYHRETENEEQTQLTQNAVSCPYLPSNLLKKFRSSTSSSLGDKSEYLEMEEGVKESLCGKEEKC
QGKGDESETDKNNCSNAKAVETDV

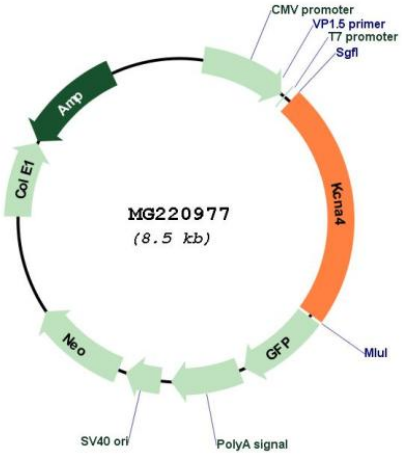
TRTRPLE - GFP Tag - V

**Restriction Sites:** SgfI-MluI

**Cloning Scheme:**



Plasmid Map:

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|---|---|
| **ACCN:** | NM_021275 |
| **ORF Size:** | 1962 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.<br>2. Carefully open the tube and add 100ul of sterile water to dissolve the DNA.<br>3. Close the tube and incubate for 10 minutes at room temperature.<br>4. Briefly vortex the tube and then do a quick spin (less than 5000xg) to concentrate the liquid at the bottom.<br>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_021275.4, NP_067250.2 |

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|---|---|
| **RefSeq Size:** | 4844 bp |
| **RefSeq ORF:** | 1965 bp |
| **Locus ID:** | 16492 |
| **UniProt ID:** | Q61423 |
| **Cytogenetics:** | 2 56.12 cM |
| **Gene Summary:** | Voltage-gated potassium channel that mediates transmembrane potassium transport in excitable membranes. 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:8020965). Can form functional homotetrameric channels and heterotetrameric channels that contain variable proportions of KCNA1, KCNA2, KCNA4, KCNA5, and possibly other family members as well; channel properties depend on the type of alpha subunits that are part of the channel (By similarity). Channel properties are modulated by cytoplasmic beta subunits that regulate the subcellular location of the alpha subunits and promote rapid inactivation. In vivo, membranes probably contain a mixture of heteromeric potassium channel complexes, making it difficult to assign currents observed in intact tissues to any particular potassium channel family member. Homotetrameric KCNA4 forms a potassium channel that opens in response to membrane depolarization, followed by rapid spontaneous channel closure (PubMed:8020965). Likewise, a heterotetrameric channel formed by KCNA1 and KCNA4 shows rapid inactivation (By similarity).[UniProtKB/Swiss-Prot Function] |