

## Product datasheet for **SC306729**

### **KCNQ4 (NM\_172163) Human Untagged Clone**

#### **Product data:**

Product Type:	Expression Plasmids
Product Name:	KCNQ4 (NM_172163) Human Untagged Clone
Tag:	Tag Free
Symbol:	KCNQ4
Synonyms:	DFNA2; DFNA2A; KV7.4
Mammalian Cell Selection:	None
Vector:	<u><a href="#">pCMV6-XL5</a></u>
E. coli Selection:	Ampicillin (100 ug/mL)



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**Fully Sequenced ORF:**

```
>OriGene sequence for NM_172163 edited
ATGGCCGAGGCCCGCCCGCCCTCGGCCTGGGTCCCCCGCCGGGACGCCCCCGC
GCGGAGCTAGTGGCGCTCACGGCCGTGCAGAGCGAACAGGGCGAGGCGGGGCGGG
TCCCCGCGCCGCTCGGCCTCCTGGGCAGCCCCCTGCCGCCGGGCGGCCCTCCCTGG
CCGGGCTCCGGCTCGGCCTCCGCTGCGCCAGCGCTCCTCGGCCGCGCACAAAGCGTAC
CGCCGCTGCAGAACTGGGTCTACAACGTGCTGGAGCGGCCCGCGGCTGGGCTTCGTC
TACCAGTCTTCATATTTTTGCTGGTCTTCAGCTGCCTGGTGCATGTCTGTGCTGCCAT
ATCCAGGAGCACCAGAACTTGCCAACGAGTGTCTCCTCATCTTGAATTCTGTGATGATC
GTGGTTTTTCGGCTTGGAGTACATCGTCCGGGTCTGGTCCGCCGGATGCTGCTGCCGCTAC
CGAGGATGGCAGGGTCGCTTCCGCTTTGCCAGAAAGCCCTTCTGTGTCATCGACTTCATC
GTGTTCTGTGGCTCGGTGGCCGTATCGCCGCGGGTACCAGGGCAACATCTTCGCCACG
TCCGCGCTGCGCAGCATGCGCTTCTGCAGATCCTGCGCATGGTGCATGGACCGCCG
GGCGGCACCTGGAAGCTGCTGGGCTCAGTGGTCTACGCGCATAGCAAGGAGCTGATCACC
GCCTGGTACATCGGGTCTCGTGGTCTCATCTTCGCTCCTTCTGGTCTACCTGGCTGAG
AAGGACGCCAACTCCGACTTCTCCTCCTACGCCACTCGTCTGGTGGGGACGATTACA
TTGACAACCATCGGCTATGGTGACAAGACACCGCACACATGGCTGGGAGGGTCCCTGGCT
GCTGGCTTCGCTTACTGGGCATCTTTCTTTGCCCTGCCTGCCGGCATCCTAGGCTCC
GGCTTTGCCCTGAAGTCCAGGAGCAGCACCGGCAAGCACTTCGAGAAGCGGAGGATG
CCGGCAGCCAACCTCATCCAGGCTGCCTGGCGCTGTACTCCACCGATATGAGCCGGGC
TACCTGACAGCCACCTGGTACTACTATGACAGTATCCTCCCATCCTTCAGCAGCCGGATG
GGCATCAAAGACCGCATCCGCATGGGCAGCTCCAGCGGGGACGGGTCTTCCAAGCAG
CATCTGGCACCTCAAACAATGCCACCTCCCAAGCAGCAGCAGGTGGGTGAGGCCACC
AGCCACCACCAAGGTGAAAAGAGCTGGAGCTTCAATGACCGCACCCGCTTCCGGGCATCT
CTGAGACTCAAACCCCGCACCTCTGCTGAGGATGCCCCCTCAGAGGAAGTAGCAGAGGAG
AAGAGCTACCAAGTGTGAGCTCACGGTGGACGACATCATGCCTGTGTGAAGACAGTCATC
CGCTCCATCAGGATTCTCAAGTCTCCTGGTGGCCAAAAGGAAATCAAGGAGACTGCGA
CCGTACGACGTGAAGGACGTCAATTGAGCAGTACTCAGCAGGCCACCTGGACATGTGGGC
CGGATCAAGAGCCTGAAACTCGGGTGGACAAATTTGGGGTCCGGGGCCCGGGGACAGG
AAGGCCCGGGGAGAAGGGGACAAGGGGCCCTCCGACGCGGAGGTGGTGGATGAAATCAGC
ATGATGGGACGCGTGGTCAAGGTGGAGAAGCAGGTGCAGTCCATCGAGCACAAAGTGGAC
CTGCTGTTGGGCTTCTATTGCGCTGCCTGCGCTCTGGCACCTCGCCAGCCTGGGCGCC
GTGCAAGTGCCGCTGTTGACCCCGACATCACCTCCGACTACCACAGCCCTGTGGACCAC
GAGGACATCTCCGCTCCGCACAGACGCTCAGCATCTCCCGCTCGGTGAGCACCACATG
GACTGA
```

**5' Read Nucleotide Sequence:**

```
>OriGene 5' read for NM_172163 unedited
GTTTCAGCATTTGTATACGACTACTATAGGCGGCCGCGNATTCAGATCTGGTACCGATAT
CAAGCTTATGGCCGAGGCCCGCCCGCCCTCGGCCTGGGTCCCCCGCCGGGACGCGC
CCCCGCGCGGAGCTAGTGGCGCTCACGGCCGTGCAGAGCGAACAGGGCGAGGCGGGCGG
GGGCGGCTCCCCGCGCCGCTCGGCCTCCTGGGCAGCCCCCTGCCGCCGGGCGCGCCCT
CCCTGGGCGGGCTCCGGCTCGGGCTCCGCTGCGGCCAGCGCTCCTCGGCCGCGCACAA
GCGCTACCGCCGCTGCANAACAGNNNNNACAACGNGCNGNNNCCNNNNNNNNNNNAGA
CCNNNNNCCACCAGNCCGACCAGAAAAGCNGGACNNCAACNGCCGGAGCAGACAGAGC
AGGACACNANCCNNNANACCANNAACCCCCCCCCNNNGNCCCCCCCCCGGAACCCN
NGAAGATCGNGGNTTTCGGCTTGGAGTACATCGTCCGGGTCTGGTCCGCCGGATGCTGCT
GCCGCTACCGAGGATGGCAGGGTCCGCTTCCGCTTGGCCNNNNNNCCNNNNNNNNNNN
NACNNNCCNNNGNCCNTGGCCTCGGTGGCCGTCATCGCCGCGGGTACCAAGGCAACATC
TTGCCACGTCCGCGCTGCGCAGCATGCGCTTCTGCAGATCCTGCGCATGGTGCAGATG
GACCGCCGCGGGCACCTGGAAGCTGCTGGGCTCAAAGGTCTACCCGCATTGCAAGGAG
CTGATACCCGCTGTACATCGGGTTCCT
```

<b>3' Read Nucleotide Sequence:</b>	>OriGene 3' read for NM_172163 unedited CATTGGGGATGGCAACTTCCAGGGCAGGNAAGCACTGGGGAGGGGTCACAGGNATGCCA CCCGGGATCTGTTTCAGGAAACAGCTATGACCGCGGCCGCAATCTAGAGTCGAGTCAGTCC ATGTTGGTGCTGACCGAGCGGGAGATGCTGAGCGTCTGTGCGGAGACGGAGATGTCCTCG TGGTCCACAGGGCTGTGGTAGTCGGAGGTGATGTCGGGGTCGAACAGCGGCACTTGCACG GCGCCCAGGCTGGCCGAGGTGCCAGAGCGCAGGCAGCGGAATAGAAGCCCAACAGCAGG TCCAGCTTGTGCTCGATGGACTGCACCTGCTTCTCCACCTTGACCACNCNTCCCATCATG CTNATTTTCATCCACCACCTCCNCGTCCGAGGGCCCTTGTGCGCCCTTCTCCCGGGCCTTC CTGTCCCCGGGCCCCCGACCCACAATTTGNTCCCCCNAGTTTGCAGGCTCTTGATCCGG CCCAGCATGTCCAGGTGGCCTGCTGAGTACTGCTCAATGACGTCCTTACGTCGTACGGT CGCAGTGTCTCCTTGAATTTCTTTTGGCCACCAGGAACCTGANAATCCTGNNGGANCNN NNNACTGGCTTACAGCAGGCATGATGTCGTCCACCGTGAGCTCACACTGGTAGCTCTTC TCCTCTGCTACTTCTCTGAGGGGGCATCCTCAGCAGAGGTGCGGGGTTTGTGCTCAGA GATGCCCGGAAGCGGGTTCGGTTCATTGAAGCTCCAGCTCTTTGCACCTTGGTGGGGCTG GTGGCCTCACCCACCTGCTCGCTGCTTGGGGAGGT
<b>Restriction Sites:</b>	Please inquire
<b>ACCN:</b>	NM_172163
<b>Insert Size:</b>	1900 bp
<b>OTI Disclaimer:</b>	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).
<b>OTI Annotation:</b>	The open reading frame of this TrueClone was fully sequenced and found to be a perfect match to the protein associated to this reference.
<b>Components:</b>	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).
<b>Reconstitution Method:</b>	<ol style="list-style-type: none"> <li>1. Centrifuge at 5,000xg for 5min.</li> <li>2. Carefully open the tube and add 100ul of sterile water to dissolve the DNA.</li> <li>3. Close the tube and incubate for 10 minutes at room temperature.</li> <li>4. Briefly vortex the tube and then do a quick spin (less than 5000xg) to concentrate the liquid at the bottom.</li> <li>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.</li> </ol>
<b>RefSeq:</b>	<u>NM_172163.1, NP_751895.1</u>
<b>RefSeq Size:</b>	2173 bp
<b>RefSeq ORF:</b>	1926 bp
<b>Locus ID:</b>	9132
<b>UniProt ID:</b>	<u>P56696</u>
<b>Cytogenetics:</b>	1p34.2
<b>Protein Families:</b>	Druggable Genome, Ion Channels: Potassium, Transmembrane

**Gene Summary:**

The protein encoded by this gene forms a potassium channel that is thought to play a critical role in the regulation of neuronal excitability, particularly in sensory cells of the cochlea. The current generated by this channel is inhibited by M1 muscarinic acetylcholine receptors and activated by retigabine, a novel anti-convulsant drug. The encoded protein can form a homomultimeric potassium channel or possibly a heteromultimeric channel in association with the protein encoded by the KCNQ3 gene. Defects in this gene are a cause of nonsyndromic sensorineural deafness type 2 (DFNA2), an autosomal dominant form of progressive hearing loss. Two transcript variants encoding different isoforms have been found for this gene. [provided by RefSeq, Jul 2008]

Transcript Variant: This variant (2) lacks an alternate in-frame exon in the central coding region, compared to variant 1, resulting in an isoform (b) that is shorter than isoform a. There are no publicly available transcripts supporting this variant; it is represented based on data in PMID:10025409.