

## Product datasheet for **RG221382**

### Nicotinic Acetylcholine Receptor alpha 7 (CHRNA7) (NM\_000746) Human Tagged ORF Clone

#### Product data:

Product Type:	Expression Plasmids
Product Name:	Nicotinic Acetylcholine Receptor alpha 7 (CHRNA7) (NM_000746) Human Tagged ORF Clone
Tag:	TurboGFP
Symbol:	Nicotinic Acetylcholine Receptor alpha 7
Synonyms:	CHRNA7-2; NACHRA7
Mammalian Cell Selection:	Neomycin
Vector:	pCMV6-AC-GFP (PS100010)
E. coli Selection:	Ampicillin (100 ug/mL)



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**ORF Nucleotide Sequence:**

>RG221382 representing NM\_000746  
 Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC  
 GCCGCGATCGCC

ATGCGCTGCTCGCCGGGAGGCGTCTGGCTGGCGCTGGCCGCGTCTCCTGCACGTGTCCTGCAAGGCG  
 AGTTCAGAGGAAGCTTTACAAGGAGCTGGTCAAGAACTACAATCCCTTGAGAGGCCCGTGCCCAATGA  
 CTCGCAACCACCTACCGTCTACTTCTCCCTGAGCCTCCTGCAGATCATGGACGTGGATGAGAAGAACC  
 GTTTAAACCACCAACATTTGGCTGCAAATGTCTTGGACAGATCACTATTTACAGTGAATGTGTCAGAAT  
 ATCCAGGGGTGAAGACTGTTCTGTTCCAGATGGCCAGATTTGGAAACCAGACATTTCTTCTATAACAG  
 TGCTGATGAGCGCTTTGACGCCACATCCACACTAACGTGTTGGTGAATCTTCTGGGCATTGCCAGTAC  
 CTGCCTCCAGGCATATCAAGAGTTCCTGCTACATCGATGACGCTGGTTCCCTTTGATGTGCAGCACT  
 GCAAACGAAGTTTGGTCTGGTCTTACGGAGGCTGGTCTTGGATCTGCAGATGCAGGAGGCAGATAT  
 CAGTGGCTATATCCCAATGGAGAATGGGACCTAGTGGGAATCCCGGCAAGAGGAGTGAAGGTTCTAT  
 GAGTGTGCAAAAGAGCCCTACCCGATGTCACCTTACAGTGACCATGCGCCGCAGGACGCTCTACTATG  
 GCCTCAACCTGCTGATCCCTGTGTGCTCATCTCCGCCCTCGCCCTGCTGGTGTCTCTGCTTCTGCAGA  
 TTCCGGGGAGAAGATTTCCCTGGGGATAACAGTCTTACTCTCTTACCCTTTCATGCTGCTCGTGGCT  
 GAGATCATGCCCGCAACATCCGATTCGGTACCATTGATAGCCAGTACTTCGCCAGCACCATGATCATCG  
 TGGGCCTCTCGGTGGTGGTGACGGTGTCTGCTGCAGTACCACCACCACGACCCCGACGGGGGCAAGAT  
 GCCCAAGTGGACCAGAGTCATCCTTCTGAAGTGGTGGCGGTGTTCTGCGAATGAAGAGGCCGGGGAG  
 GACAAGGTGCCCGGCCCTGCCAGCACAAAGCAGCGGCGCTGCAGCCTGGCCAGTGTGGAGATGAGCGCCG  
 TGGCGCCGCCCGCCAGCACAGCGGAACCTGCTGATCATCGGCTTCCCGGCCCTGGACGGCGTGCACCT  
 TGTCGCCGACCCCGACTCTGGGGTAGTGTGGCCGCATGGCCTGCTCCCCACGCACGATGAGCACCTC  
 CTGCACGGCGGGCAACCCCGAGGGGGACCCGACTTGGCCAAGATCCTGGAGGAGTCCGCTACATTG  
 CCAACCGTTCGCTGCCAGGACGAAAGCGAGGCGGTCTGCAGCGAGTGGAAAGTTCGCCGCTGTGTGGT  
 GGACCGCTGTGCCTCATGGCCTTCTCGGTCTTACCATCATCTGCACCATCGGCATCCTGATGTCGGCT  
 CCCAACTTCGTGGAGGCCGTGTCCAAAGACTTTGCG

ACGCGTACGCGGCCGCTCGAG - GFP Tag - GTTTAA

**Protein Sequence:**

>RG221382 representing NM\_000746  
 Red=Cloning site Green=Tags(s)

MRCSPGGVWLALAASLLHVSLQGEFQRKLYKELVKNYNPLERPVANDSQPLTVYFSLSLQIMDVDEKNQ  
 VLTNNIWLQMSWDHYLQWNVSEYPGVKTVRFDPGQIWKPDILLYNSADERFDATFHTNVLVNSSGHCQY  
 LPPGIFKSSCYIDVRWFFPDVQHCKLKFGSWSYGGWLDLQMQEADISGYIPNGEWDLVGIPGKRSEFY  
 ECCKEPYPDVTFVTMRRRTLYYGLNLLIPCVLISALALLVFLLPADSGEKISLGITVLLSLTVFMILLVA  
 EIMPATSDSVPLIAQYFASTMIIVGLSVVTVIVLQYHHHDPDGGKMPKWTRVILLNWCWFLRMKRPGE  
 DKVRPACQHKQRRCSLASVEMSAVAPPPASNGNLLYIGFRGLDGVHCVPTPDSGVVCGRMACSPHDEHL  
 LHGGQPPEGDPDLAKILEEVRYIANRFRQDESEAVCSEWKFAACVVDRLCLMAFSVFTIICTIGILMSA  
 PNFVEAVSKDFA

TRTRPLE - GFP Tag - V

**Restriction Sites:**

Sgfl-Mlul

**Cloning Scheme:**



**ACCN:** NM\_000746

**ORF Size:** 1506 bp

**OTI Disclaimer:** Due to the inherent nature of this plasmid, standard methods to replicate additional amounts of DNA in E. coli are highly likely to result in mutations and/or rearrangements. Therefore, OriGene does not guarantee the capability to replicate this plasmid DNA. Additional amounts of DNA can be purchased from OriGene with batch-specific, full-sequence verification at a reduced cost. Please contact our customer care team at [custsupport@origene.com](mailto:custsupport@origene.com) or by calling 301.340.3188 option 3 for pricing and delivery.

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.

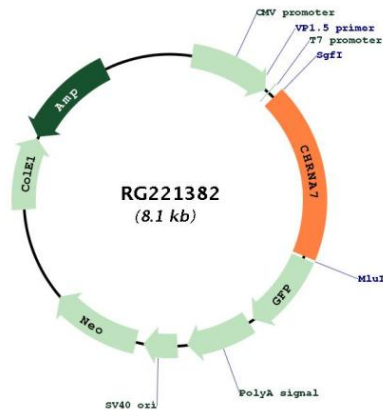
**Components:** The ORF clone is ion-exchange column purified and shipped in a 2D barcoded Matrix tube containing 10ug of transfection-ready, dried plasmid DNA (reconstitute with 100 ul of water).

- 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:** [NM\\_000746.2](#), [NP\\_000737.1](#)

RefSeq Size:	2155 bp
RefSeq ORF:	1509 bp
Locus ID:	1139
UniProt ID:	<a href="#">P36544</a>
Cytogenetics:	15q13.3
Protein Families:	Druggable Genome, Ion Channels: Cys-loop Receptors, Transmembrane
Protein Pathways:	Calcium signaling pathway
Gene Summary:	<p>The nicotinic acetylcholine receptors (nAChRs) are members of a superfamily of ligand-gated ion channels that mediate fast signal transmission at synapses. The nAChRs are thought to be hetero-pentamers composed of homologous subunits. The proposed structure for each subunit is a conserved N-terminal extracellular domain followed by three conserved transmembrane domains, a variable cytoplasmic loop, a fourth conserved transmembrane domain, and a short C-terminal extracellular region. The protein encoded by this gene forms a homo-oligomeric channel, displays marked permeability to calcium ions and is a major component of brain nicotinic receptors that are blocked by, and highly sensitive to, alpha-bungarotoxin. Once this receptor binds acetylcholine, it undergoes an extensive change in conformation that affects all subunits and leads to opening of an ion-conducting channel across the plasma membrane. This gene is located in a region identified as a major susceptibility locus for juvenile myoclonic epilepsy and a chromosomal location involved in the genetic transmission of schizophrenia. An evolutionarily recent partial duplication event in this region results in a hybrid containing sequence from this gene and a novel FAM7A gene. Alternative splicing results in multiple transcript variants. [provided by RefSeq, Feb 2012]</p>

**Product images:**



Circular map for RG221382