

## Product datasheet for **RG239114**

### Acetylcholinesterase (ACHE) (NM\_001302621) Human Tagged ORF Clone

#### Product data:

|                           |   |
|---------------------------|---|
| Product Type:             | Expression Plasmids   |
| Product Name:             | Acetylcholinesterase (ACHE) (NM_001302621) Human Tagged ORF Clone |
| Tag:                      | TurboGFP  |
| Symbol:                   | Acetylcholinesterase  |
| Synonyms:                 | ACEE; ARACHE; N-ACHE; YT  |
| Mammalian Cell Selection: | Neomycin  |
| Vector:                   | pCMV6-AC-GFP (PS100010)   |
| E. coli Selection:        | Ampicillin (100 ug/mL)  |



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**ORF Nucleotide Sequence:**

>RG239114 representing NM\_001302621.  
Blue=ORF Red=Cloning site Green=Tag(s)

```
GCTCGTTTAGTGAACCGTCAGAATTTTGTAAACGACTCACTATAGGGCGGCCGGGAATTCGTGACTG
GATCCGGTACCGAGGAGATCTGCCGCCGCGATCGCC
ATGAGGCCCGCAGTGTCTGCTGCACACGCCTTCCCTGGCTTCCCCTCTTCTCCTCCTCTCTGG
CTCCTGGGTGGAGGAGTGGGGGCTGAGGGCCGGGAGGATGCAGAGCTGCTGGTGACGGTGGTGGGGC
CGGCTGCGGGGCATTGCGCTGAAGACCCCGGGGCCCTGTCTGCTTTCTGGGCATCCCTTTGCG
GAGCCACCATGGGACCCGTCGCTTTCTGCCACCGAGCCCAAGCAGCCTTGGTCAGGGGTGGTAGAC
GCTACAACCTTCCAGAGTGTCTGCTACCAATATGTGGACACCCTATACCCAGTTTTGAGGGACCGAG
ATGTGGAACCCCAACCGTGAAGTGAAGTGAAGTGAAGTGAAGTGAAGTGAAGTGAAGTGAAGTGAAG
CCTACATCCCCACCCCTGTCTCGTCTGGATCTATGGGGTGGCTTCTACAGTGGGGCCTCCTCCTTG
GACGTGTACGATGGCCGCTTCTGGTACAGGCCGAGAGGACTGTGCTGGTGTCCATGAACTACCGGGTG
GGAGCCTTTGGCTTCTGGCCCTGCCGGGAGCCGAGAGGCCCGGGCAATGTGGGTCTCCTGGATCAG
AGGCTGGCCCTGCAGTGGGTGCAGGAGAAGCTGGCAGCCTTCGGGGTGACCCGACATCAGTGACGCTG
TTTGGGGAGAGCGGGGAGCCGCTCGGTGGGCATGCACCTGCTGTCCCCGCCAGCCGGGGCTGTTC
CACAGGGCCGTGCTGCAGAGCGGTGCCCAATGGACCCTGGGCCACGGTGGGCATGGGAGAGGCCCGT
CGCAGGGCCACGAGCTGGCCACCTTGTGGGCTGTCTCCAGGGCGCACTGGTGGGAATGACACAGAG
CTGGTAGCCTGCCTTCGGACACGACCAGCGCAGGTCTGGTGAACCACGAATGGCACGTGCTGCCTCAA
GAAAGCGTCTCCGGTCTCCTTCGTGCCTGTGGTAGAGTGGAGACTTCTCAGTGACACCCAGAGGCC
CTCATCAACGCGGGAGACTTCCACGGCTGCAGGTGCTGGTGGGTGTGGTGAAGGATGAGGGCTCGTAT
TTTCTGGTTACGGGGCCAGGCTTCCAGAAAGACAACGAGTCTCTCATCAGCCGGGCCGAGTTCTAC
GCCGGGTGCGGGTCCGGTTCAGCAAGTAAAGTAAAGTAAAGTAAAGTAAAGTAAAGTAAAGTAAAGTAA
GACTGGCTGCATCCCGAGGACCCGACCGCTGAGGGAGGCCCTGAGCGATGTGGTGGGGACCAAT
GTCGTGTGCCCGTGGCCAGCTGGCTGGGCGACTGGCTGCCAGGGTGGCCGGGTCTACGCCACGTC
TTTGAACACCGTCTTCCAGCTCTCCTGGCCCTGTGGATGGGGTGGCCACGGCTACGAGATCGAG
TTCATCTTTGGATCCCCCTGGACCCCTCTCGAAACTACACGGCAGAGGAGAAAACTTCGCCACGCGA
CTGATGCGATACTGGCCAACTTGCACGACAGGGGATCCCAATGAGCCCCGAGACCCCAAGGCCCA
CAATGGCCCCGTACACGGCGGGGCTCAGCAGTACGTTAGTCTGGACCTGCGGCCGCTGGAGGTGCGG
CGGGGGTGCAGCCAGGCTGCGCTTCTGAAACCGCTTCTCCCAAATTGCTCAGCGCCACCGCC
TCGGAGGCTCCCAGCACCTGCCAGGCTTACCCATGGGGAGGCTGCTCCGAGGCCCGGCTCCCCCTG
CCCTCCTCCTCCACAGCTTCTCCTCTCTCCTCTCCCACCTCCGGCGGCTG
ACGCGTACCGGGCCGCTCGAG - GFP Tag - GTTTAAAC
```

**Protein Sequence:**

>Peptide sequence encoded by RG239114  
Blue=ORF Red=Cloning site Green=Tag(s)

```
MRPPQCLLHTPSLASPLLLLLLWLLGGVGAEGREDAELLVTVRGRRLRGIRLKTGGPVSAFLGIPFA
EPPMGPRRFLPPEPKQPWSGVVDATTFQSVCYQYVDTLYPGFEGTEMWNPRELSEDCLYLNWVTPYPR
PTSPTPVLVWIYGGGFYSGASSLDVYDGRFLVQAERTVLYSMNYRVGAFGLALPGSREAPGNVGLLDQ
RLALQWVQENVAAFGGDPTSVTLFGESAGAAVGMHLLSPPSRGLFHRAVLQSGAPNGPWATVGMGEAR
RRATQLAHLVGCPPGGTGGNDTELVACLRTRPAQVLVNHVHVLVQESVFRFSFVPPVVDGDFLSDTPEA
LINAGDFHGLQVLGVVKDEGSYFLVYGAPGFSKDNESLISRAEFLAGVRVGVVQVSDLAAEAVVLHYT
DWLHPEDPARLREALSDVVGDHNVVCPVAQLAGRLAAQGARVYAYVFEHRASTLSWPLWMGVPHGYEIE
FIFGIPLDPSRNYTAEKIFAQRLMRYWANFARTGDPNEPRDPKAPQWPPYTAGAQYVSLDLRPLEVR
RGLRAQACAFWNRFLPKLLSATASEAPSTCPGFTHGEAAPRPGLPLPLLLHQLLLLFLSHLRL
TRTRPLEMESDESGLPAMEIECRITGTLNGVEFELVGGGEGTPEQGRMTNKMSTKGALTFSPYLLSHV
MGYGFYHFGTYPYSGYENPFLHAINNGGYNTRIEKYEDGGVLHVFSYRYEAGRVIGDFKVMGTGFPE
SVIFTDKIIIRSNAVHLPMDNDLDGFSFTRFSLRDGGYSSVVDSHMFKSAIHPSILQNGGPMFA
FRRVEEDHSNTELGIVEYQHAFKTPDADAGEERV
```

**Restriction Sites:**

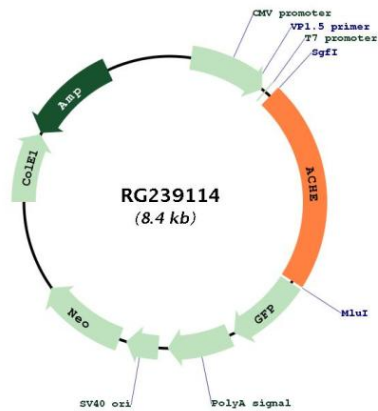
Sgfl-MluI

**Cloning Scheme:**


- ACCN:** NM\_001302621
- ORF Size:** 1851 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).
- RefSeq:** [NM\\_001302621.3](#)
- RefSeq Size:** 2299 bp
- RefSeq ORF:** 1854 bp
- Locus ID:** 43
- UniProt ID:** [P22303](#)
- Cytogenetics:** 7q22.1
- Protein Families:** Druggable Genome
- Protein Pathways:** Glycerophospholipid metabolism
- MW:** 67.4 kDa

**Gene Summary:**

Acetylcholinesterase hydrolyzes the neurotransmitter, acetylcholine at neuromuscular junctions and brain cholinergic synapses, and thus terminates signal transmission. It is also found on the red blood cell membranes, where it constitutes the Yt blood group antigen. Acetylcholinesterase exists in multiple molecular forms which possess similar catalytic properties, but differ in their oligomeric assembly and mode of cell attachment to the cell surface. It is encoded by the single ACHE gene, and the structural diversity in the gene products arises from alternative mRNA splicing, and post-translational associations of catalytic and structural subunits. The major form of acetylcholinesterase found in brain, muscle and other tissues is the hydrophilic species, which forms disulfide-linked oligomers with collagenous, or lipid-containing structural subunits. The other, alternatively spliced form, expressed primarily in the erythroid tissues, differs at the C-terminal end, and contains a cleavable hydrophobic peptide with a GPI-anchor site. It associates with the membranes through the phosphoinositide (PI) moieties added post-translationally. AChE activity may constitute a sensitive biomarker of RBC ageing in vivo, and thus, may be of aid in understanding the effects of transfusion[provided by RefSeq, Sep 2019]

**Product images:**

Circular map for RG239114