

Product datasheet for **RG211249**

Acetylcholinesterase (ACHE) (NM_015831) Human Tagged ORF Clone

Product data:

Product Type:	Expression Plasmids
Product Name:	Acetylcholinesterase (ACHE) (NM_015831) 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:

>RG211249 representing NM_015831
 Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC
 GCC**CGCATCGCC**

ATGAGGCCCCCGCAGTGTCTGCTGCACACGCCTTCCCTGGCTTCCCCTCCTTCTCCTCCTCCTGCG
 TCCTGGGTGGAGAGTGGGGCTGAGGGCCGGGAGGATGCAGAGCTGCTGGTGACGGTGCCTGGGGCCG
 GCTGCGGGCATTGCGCTGAAGACCCCCGGGGCCCTGTCTGCTTTCTGGGCATCCCCTTTGCGGAG
 CCACCCATGGGACCCCGTCGTTTCTGCCACCGGAGCCCAAGCAGCCTTGGTCAGGGGTGGTAGACGCTA
 CAACCTTCCAGAGTGTCTGCTACCAATATGTGGACACCTATAACCAGGTTTTGAGGGCACCGAGATGTG
 GAACCCCAACCGTGAGCTGAGCGAGGACTGCCTGTACCTCAACGTGTGGACACCATACCCCGGCCTACA
 TCCCCACCCCTGCTCCTGCTGGATCTATGGGGTGGCTTCTACAGTGGGGCTCCTCCTTGGACGTGT
 ACGATGGCCGCTTCTTGGTACAGGCCGAGAGGACTGTGCTGGTGTCCATGAACACCGGGTGGGAGCCTT
 TGCTTCTCCTGGCCCTGCCGGGAGCCGAGAGGCCCGGGCAATGTGGGTCTCCTGGATCAGAGGCTGGCC
 CTGCAGTGGGTGCAGGAGAACGTGGCAGCCTTCGGGGGTACCCGACATCAGTGACGCTGTTTGGGGAGA
 GCGCGGGAGCCGCTCGGTGGGCATGCACCTGCTGTCCCCGCCAGCCGGGGCTGTTCCACAGGGCCGT
 GCTGCAGAGCGGTGCCCCAATGGACCTGGGCCACGGTGGGCATGGGAGAGGCCGTCGCAGGGCCACG
 CAGCTGGCCACCTTGTGGGCTGTCTCCAGCGGCACTGGTGGGAATGACACAGAGCTGGTAGCCTGCC
 TTCGGACACGACCAGCGCAGGTCTGGTGAACCACGAATGGCAGCTGCTGCCTCAAGAAAGCGTCTTCCG
 GTTCTCCTTGTGCTGTGGTAGATGGAGACTTCTCAGTGACACCCAGAGGCCCTCATCAACGCGGGA
 GACTTCCACGGCTGCAGGTGCTGGTGGTGTGGTGAAGGATGAGGGCTCGTATTTCTGGTTTACGGGG
 CCCCAGGCTTACGAAAGACAACGAGTCTCTCATCAGCCGGGCGGAGTTCTGGCCGGGTGCGGGTCCG
 GGTTCCCAAGTAAGTGACCTGGCAGCCGAGGCTGTGGTCTGCATTACACAGACTGGTGCATCCCGAG
 GACCCGGCACGCCTGAGGGAGGCCCTGAGCGATGTGGTGGGCAGCCACAATGTCGTGTGCCCGTGGCC
 AGCTGGCTGGCGACTGGCTGCCAGGGTGGCCGGTCTACGCCTACGTCTTTGAACACCGTGTCCAC
 GCTCTCCTGGCCCTGTGGATGGGGTGGCCACGGCTACGAGATCGAGTTCATCTTTGGGATCCCCCTG
 GACCCCTCTCGAACTACACGGCAGAGGAGAAAATCTTCGCCAGCGACTGATGCGATACTGGGCCAACT
 TTGCCCGCACAGGGATCCCAATGAGCCCCGAGACCCCAAGGCCCAACAATGGCCCCGTACACGGCGGG
 GGCTCAGCAGTACGTTAGTCTGGACCTGCGGCCGCTGGAGGTGCGGCGGGGGCTGCGGCCACGGCTGC
 GCCTTCTGGAACCGCTTCTCCCAAATGCTCAGCGCCACCGCCTCGGAGGCTCCAGCACCTGCCAG
 GCTTACCCATGGGGAGGCTGCTCCGAGGCCCGGCTCCCCCTGCCCTCCTCCTCCTCCACCAGCTTCT
 CCTCCTTCTCCTCCACCTCCGGCGGCTG

ACGCGTACGCGGCCGCTCGAG – GFP Tag – GTTTAA

Protein Sequence:

>RG211249 representing NM_015831
 Red=Cloning site Green=Tags(s)

MRPPQCLLHTPSLASPLLLLLLWLLGGGVGAEGREDAELLVTVRGGRLRGIRLKTGGPVSAFLGIPFAE
 PPMGPRRFLPPEPKQPWGSVVDATTFQSVCYQYVDLTPGFEGTEMWNPNSRELSEDCLYLNWTPYPRPT
 SPTPVLVWIYGGGFYSGASSLDVYDGRFLVQAERTVLSVMNYRVGAFGLALPGSREAPGNVGLLDQRLA
 LQWVQENVAAFGGDPTSVTLFGESAGAASVGMHLLSPPSRGLFHRAVLQSGAPNGPWATVGMGEARRRAT
 QLAHLVGCPPGGTGGNDTELVACLRTRPAQVLVNHEWHVLPQESVFRFSFVPVVDGDFLSDTPEALINAG
 DFHGLQVLVGKDEGSYFLVYGAPGFSKDNESLISRAEFLAGVRVGVQVSDLAEEAVVLHYTDWLHPE
 DPARLREALSDVVGDHNVVCPVAQLAGRLAAQGARVYAYVFEHRASLWSPLWMGVPHGYEIEFIFGIPL
 DPSRNYTAEKIFAQRLMRYWANFARTGDPNEPRDPKAPQWPPYTAGAQQYVSLDLRPLEVRRGLRAQAC
 AFWNRFLPKLLSATASEAPSTCPGFTHGEAAPRPLPLLLLLHQLLLFLSHLRRL

TRTRPLE – GFP Tag – V

Restriction Sites:

Sgfl-MluI

Cloning Scheme:


ACCN: NM_015831

ORF Size: 1851 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 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:

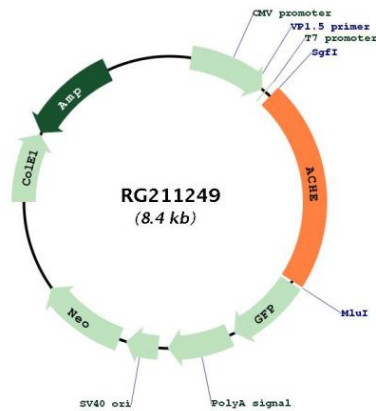
1. Centrifuge at 5,000xg for 5min.
2. Carefully open the tube and add 100ul of sterile water to dissolve the DNA.
3. Close the tube and incubate for 10 minutes at room temperature.
4. Briefly vortex the tube and then do a quick spin (less than 5000xg) to concentrate the liquid at the bottom.
5. Store 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_015831.2](#), [NP_056646.1](#)

RefSeq Size:	2978 bp
RefSeq ORF:	1854 bp
Locus ID:	43
UniProt ID:	P22303
Cytogenetics:	7q22.1
Protein Families:	Druggable Genome
Protein Pathways:	Glycerophospholipid metabolism
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 RG211249