

Product datasheet for **SC322093**

Acetylcholinesterase (ACHE) (NM_000665) Human Untagged Clone

Product data:

Product Type:	Expression Plasmids
Product Name:	Acetylcholinesterase (ACHE) (NM_000665) Human Untagged Clone
Tag:	Tag Free
Symbol:	Acetylcholinesterase
Synonyms:	ACEE; ARACHE; N-ACHE; YT
Mammalian Cell Selection:	Neomycin
Vector:	pCMV6-AC (PS100020)
E. coli Selection:	Ampicillin (100 ug/mL)



[View online »](#)

Fully Sequenced ORF: >OriGene sequence for SC322093
 ACTGCGCTCTGTCGTCGGTTCGGCTCTGGCACTGGAACGCCGCTGCCATGCAGCCATGA
 GGCCCCCGCAGTGTCTGCTGCACACGCCTTCCCTGGCTTCCCCACTCCTTCTCCTCCTCG
 TCTGGCTCCTGGGTGGAGGAGTGGGGCTGAGGGCCGGGAGGATGCAGAGCTGCTGGTGA
 CGGTGCGTGGGGCCGGCTGCGGGCATTTCGCTGAAGACCCCGGGGCCCTGTCTCTG
 CTTTCTGGGCATCCCCTTTGGCGAGCCACCATGGGACCCCGTCGCTTCTGCCACCGG
 AGCCCAAGCAGCCTTGGTCAGGGTGGTAGACGCTACAACCTTCCAGAGTGTCTGCTACC
 AATATGTGGACCCCTATACCCAGGTTTTGAGGGCACCGAGATGTGGAACCCCAACCGTG
 AGCTGAGCGAGGACTGCCTGTACCTCAACGTGTGGACACCATAACCCCGGCTACATCCC
 CCACCCCTGTCATCGTCTGGATCTATGGGGTGGCTTCTACAGTGGGGCCTCCTCCTTGG
 ACGTGTACGATGGCCGCTTCTTGGTACAGGCCGAGAGGACTGTGCTGGTGTCCATGAACT
 ACCGGGTGGGAGCCTTGGCTTCTGCCCCTGCCGGGAGCCGAGAGGCCCGGGCAATG
 TGGGTCTCCTGGATCAGAGGCTGCCCTGCAGTGGTGCAGGAGAACGTGGCAGCCTTCG
 GGGGTGACCCGACATCAGTGACGCTGTTTGGGAGAGCGGGAGCCGCCTCGGTGGGCA
 TGCACCTGCTGTCCCGCCAGCCGGGCTGTTCCACAGGGCCGTGCTGCAGAGCGGTG
 CCCCCAATGGACCTGGGCCACGGTGGCATGGGAGAGGCCCGTCGAGGGCCACGCAGC
 TGGCCACCTTGTGGGCTGTCCTCCAGGCGCACTGGTGGGAATGACACAGAGCTGGTAG
 CCTGCCTTCGGACACGACCAGCGCAGGTCTGGTGAACCACGAATGGCACGTGCTGCCTC
 AAGAAAGCGTCTTCCGGTTCCTTCGTGCCTGTGGTAGAGACTTCTCAGTGACA
 CCCCAGAGGCCCTCATCAACCGGGAGACTTCCACGGCTGCAGGTGCTGGTGGGTGGG
 TGAAGGATGAGGGCTCGATTTTCTGGTTTACGGGGCCCCAGGCTTCCAGCAAAGACAACG
 AGTCTCTCATCAGCCGGCCGAGTTCCTGGCCGGGTGCCGGTTCGGGTTCCTCCAGGTA
 GTGACCTGGCAGCCGAGGCTGTGGTCTGCATTACACAGACTGGTGCATCCCGAGGACC
 CGGCACGCCTGAGGGAGGCCCTGAGCGATGTGGTGGGCGACCACAATGTGCTGTGCCCG
 TGGCCAGCTGGCTGGGCGACTGGCTGCCAGGGTGCCGGGTCTACGCCTACGTCTTTG
 AACACCGTGTTCACGCTCTCCTGGCCCTGTGGATGGGGTGGCCACGGCTACGAGA
 TCGAGTTCATCTTTGGGATCCCCCTGGACCCCTCTCGAACTACACGGCAGAGGAGAAAA
 TCTTCGCCAGCGACTGATGCGATACTGGGCCAACTTTGCCCGCACAGGGGATCCCAATG
 AGCCCCGAGACCCCAAGGCCCAACAATGGCCCCGTACACGGCGGGGGCTCAGCAGTACG
 TTAGTCTGGACCTGCGGCCGCTGGAGGTGCGGCGGGGCTGCGCGCCAGGCCTGCGCCT
 TCTGGAACCGCTTCTCCCAAATTGCTCAGCGCCACCGACACGCTCGACGAGGCGGAGC
 GCCAGTGAAGGCCGAGTTCACCGCTGGAGCTCCTACATGGTGCATGGAAGAACCAGT
 TCGACACTACAGCAAGCAGGATCGCTGCTCAGACCTGTGACCCCGCGGGACCCCATGT
 CCTCCGCTCCGCCGGCCCCCTAGCTGTATATACTATTTATTTACAGGGCTGGGCTATAAC
 ACAGACGAGCCCCAGACTCTGCCATCCCCACCCACCCGACGTCCCCCGGGGCTCCCG
 GTCATCTGCATGTCTCAGGCTGAGCTCCCTCCCCCGGGTGCCTTCGCCCTCTGGGCTG
 CCAATAAACTGTTACAGCAAAAAAAAAAAAAAAAAA

Restriction Sites: Please inquire

ACCN: NM_000665

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 TrueClone is provided through our Custom Cloning Process that includes sub-cloning into OriGene's pCMV6 vector and full sequencing to provide a non-variant match to the expected reference without frameshifts, and is delivered as lyophilized plasmid DNA.

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_000665.3](#), [NP_000656.1](#)

RefSeq Size: 2225 bp

RefSeq ORF: 1845 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]

Transcript Variant: This variant (E4-E6) encodes the hydrophilic form of acetylcholinesterase, isoform (E4-E6). Sequence Note: This RefSeq record was created from transcript and genomic sequence data to make the sequence consistent with the reference genome assembly. The genomic coordinates used for the transcript record were based on transcript alignments.