

## Product datasheet for **RG227499**

### Choline Acetyltransferase (CHAT) (NM\_001142933) Human Tagged ORF Clone

#### Product data:

Product Type:	Expression Plasmids
Product Name:	Choline Acetyltransferase (CHAT) (NM_001142933) Human Tagged ORF Clone
Tag:	TurboGFP
Symbol:	Choline Acetyltransferase
Synonyms:	CHOACTASE; CMS1A; CMS1A2; CMS6
Mammalian Cell Selection:	Neomycin
Vector:	pCMV6-AC-GFP (PS100010)
E. coli Selection:	Ampicillin (100 ug/mL)



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**ORF Nucleotide Sequence:**

>RG227499 representing NM\_001142933  
 Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC  
 GCC**GCGATCGCC**

ATGTGGCCGGAATGCAGAGATGAAGCACTGAGCACAGTAGGTCCACACCTCTGCATCCCTGCACCAGGAC  
 TCACCAAGACGCCCATCCTGAAAAAGTCCCCGTAAGATGGCAGCAAAAACCTCCAGCAGTGAGGAGTC  
 TGGGCTGCCAAAACCTGCCCGTGCCCGCTGCAGCAGACCCTGGCCACGTACCTGCAGTGCATGCCACAC  
 TTGGTGTCTGAGGAGCAGTTTCAGGAAGAGCCAGGCCATTGTGCAGCAGTTTGGGGCCCTGGTGGCTCG  
 GCGAGACCCTGCAGCAGAAAACCTCTGGAGCGGCAGGAGAAGACAGCCAACCTGGGTGTCTGAGTACTGGCT  
 GAATGACATGTATCTCAACAACCGCTGGCCCTGCCTGTCAACTCCAGCCCTGCCGTGATCTTTGCTCGG  
 CAGCACTCCCTGGCACCAGTACCAGCTGAGGTTTGCAGCCAGCCTCATCTCTGGTGTACTCAGCTACA  
 AGGCCCTGCTGGACAGCCACTCCATTCCCAGTACTGTGCCAAAGGCCAGCTGTCAGGGCAGCCCCTTTG  
 CATGAAGCAATACTATGGGCTCTTCTCCTCCTACCGGCTCCCCGGCCATACCCAGGACACGCTGGTGGCT  
 CAGAACAGCAGCATCATGCCGGAGCCTGAGCAGCTCATCGTAGCCTGCTGCAATCAGTTCTTTGTCTTGG  
 ATGTTGTCAATATTTCCGCCGTCTCAGTGAGGGGATCTGTTCACTCAGTTGAGAAAGATAGTCAAAAT  
 GGCTTCCAACGAGGACGAGCGTTTGCCTCCAATTGGCCTGCTGACGTCTGACGGGAGGAGCGAGTGGCC  
 GAGGCCAGGACGGTCTCGTGAAAGACTCCACCAACCGGGACTCGCTGGACATGATTGAGCGCTGCATCT  
 GCCTTGTATGCCTGGACGCGCCAGGAGCGTGGAGCTCAGCGACACCCACAGGGCACTCCAGCTCCTTCA  
 CGGCGGAGGCTACAGCAAGAACGGGGCAATCGCTGGTACGACAAGTCCCTGCAGTTTGTGGTGGCCGA  
 GACGGCACCTGCGGTGTGGTGTGCGAACACTCCCATTTCGATGGCATCGTCTGGTGCAGTGCACCTGAGC  
 ATCTGCTCAAGCACATGACGCAGAGCAGCAGGAAGCTGATCCGAGCAGACTCCGTCAGCGAGCTCCCCGC  
 CCCCCGAGGCTGCGGTGAAAATGCTCCCCGAAATTCAGGCCACTTAGCCTCCTCGGCAGAAAACCTT  
 CAACGAATAGTAAAGAACCTTGACTTCATTGTCTATAAGTTTGACAACATGGGAAAACATTCATTAAGA  
 AGCAGAAATGCAGCCCTGATGCCTTCATCCAGGTGGCCCTCCAGCTGGCCTTCTACAGGCTCCATCGAAG  
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 GCCACTCCAGAGGCACTGGCTTTTGTGAGAGCCGTGACTGACCACAAGGCTGCTGTGCCAGCTTCTGAGA  
 AGCTTCTGCTCCTGAAGGATGCCATCCGTGCCAGACTGCATACACAGTCATGGCCATAACAGGGATGGC  
 CATTGACAACCACCTGCTGGCACTGCGGGAGCTGGCCCGGCCATGTGCAAGGAGCTGCCCGAGATGTTT  
 ATGGATGAAACCTACCTGATGAGCAACCGGTTTGTCTCCTCCTAGCCAGGTGCCACAACCACGGAGA  
 TGTCTGCTGCTATGGTCTGTGGTCCCAAATGGGTATGGTGCCTGCTACAACCCCCAGCCAGAGACCAT  
 CCTTTTCTGCATCTCTAGCTTTCACAGCTGCAAAGAGACTTCTTCTAGCAAGTTTGCAAAAGCTGTGGAA  
 GAAAGCCTCATTGACATGAGAGACCTCTGCAGTCTGCTGCCCGCTACTGAGAGCAAGCCATTGGCAACAA  
 AGGAAAAAGCCACGAGGCCAGCCAGGGACACCAACCT

AG**CGGACCG**ACGCGTACGCGGCCGCTCGAG – GFP Tag – GTTTAA

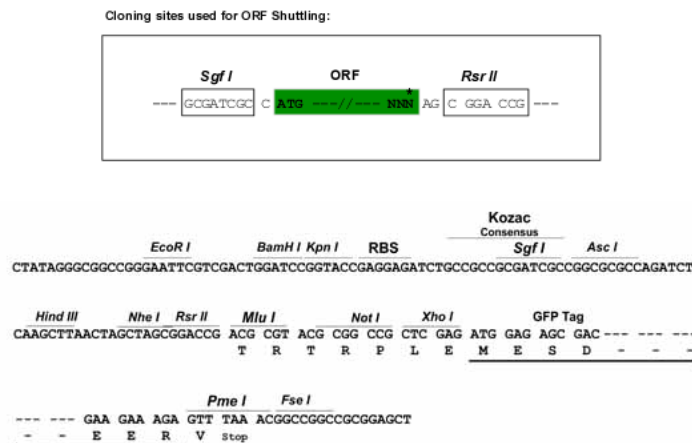
**Protein Sequence:** >RG227499 representing NM\_001142933  
Red=Cloning site Green=Tags(s)

MWPECRDEALSTVGPLHCIPAPGLTKTPILEKVPKMAAKTPSSEESGLPKLPVPLPQTLATYLQCMRH  
LVSEEQFRKSQAIVQQFGAPGGLGETLQQKLLERQKTNVWSEYWLNDMYLNNRLLPWNSSPAVIFAR  
QHFPGTDDQLRFAASLISGVL SYKALLDSHSIPTDCAKQQLSGQPLCMKQYYGLFSSYRLPGHTQDTLVA  
QNSSIMPEPEHVIVACCNQFFVLDVVINFRRLESEGDLFTQLRKIVKMASNEDERLPPIGLLTSDGRSEWA  
EARTVLVKDSTNRDSLMIERICLVCLDAPGGVELSDTHRALQLLHGGYKNGANRWYDKSLQFVVG  
DGTGCVVCEHSPFDGIVLVQCTEHLKHM TQSSRKLIRADSVSEL PPRRLRWKCSPEIQGHLASSAEKL  
QRIVKLNDFIVYKFDNYGKTFIKKQKCPDAFIQVALQLAFYRLHRRLLVPTYESASIRRFQEGVDNIRS  
ATPEALAFVRAVDHKAAPASEKLLLLKDAIRAQTAYTVMAITGMAIDNHLALRELARAMCKELPEMF  
MDETYLMSNRVFLSTSQVPTTTEMFCCYGPVVPNGYGACYNPQPETILFCISSFHCKETSSSKFAKAVE  
ESLIDMRDLCSLLPPTESKPLATKEKATRPSQGHQP

SGPTRRRLE - GFP Tag - V

**Restriction Sites:** SgfI-RsrII

**Cloning Scheme:**



**ACCN:** NM\_001142933

**ORF Size:** 1998 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).

**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\\_001142933.1](#), [NP\\_001136405.1](#)

**RefSeq Size:** 2528 bp

**RefSeq ORF:** 2001 bp

**Locus ID:** 1103

**UniProt ID:** [P28329](#)

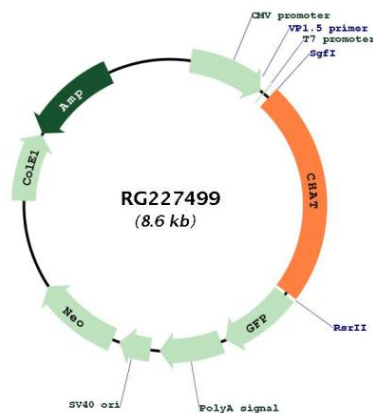
**Cytogenetics:** 10q11.23

**Protein Families:** Druggable Genome

**Protein Pathways:** Glycerophospholipid metabolism

**Gene Summary:** This gene encodes an enzyme which catalyzes the biosynthesis of the neurotransmitter acetylcholine. This gene product is a characteristic feature of cholinergic neurons, and changes in these neurons may explain some of the symptoms of Alzheimer's disease. Polymorphisms in this gene have been associated with Alzheimer's disease and mild cognitive impairment. Mutations in this gene are associated with congenital myasthenic syndrome associated with episodic apnea. Multiple transcript variants encoding different isoforms have been found for this gene, and some of these variants have been shown to encode more than one isoform. [provided by RefSeq, May 2010]

**Product images:**



Circular map for RG227499