

## Product datasheet for **RC227219**

### Choline Acetyltransferase (CHAT) (NM\_001142929) Human Tagged ORF Clone

#### Product data:

Product Type:	Expression Plasmids
Product Name:	Choline Acetyltransferase (CHAT) (NM_001142929) Human Tagged ORF Clone
Tag:	Myc-DDK
Symbol:	Choline Acetyltransferase
Synonyms:	CHOACTASE; CMS1A; CMS1A2; CMS6
Mammalian Cell Selection:	Neomycin
Vector:	pCMV6-Entry (PS100001)
E. coli Selection:	Kanamycin (25 ug/mL)



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**ORF Nucleotide Sequence:**

>RC227219 representing NM\_001142929  
 Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC  
 GCC**GCGATCGCC**

ATGGCAGCAAAAACCTCCAGCAGTGGAGTCTGGGCTGCCAAACTGCCCGTGCCCGCTGCAGCAGA  
 CCCTGGCCACGTACCTGCAGTGCATGCGACACTTGGTGTCTGAGGAGCAGTTCAGGAAGAGCCAGGCCAT  
 TGTGCAGCAGTTTGGGGCCCTGGTGGCCTCGGCGAGACCCTGCAGCAGAAAACCTGGAGCGGCAGGAG  
 AAGACAGCCAACCTGGGTGTCTGAGTACTGGCTGAATGACATGTATCTCAACAACCGCCTGGCCCTGCCTG  
 TCAACTCCAGCCCTGCCGTGATCTTTGCTCGGCAGCACTTCCCTGGCACCAGTACCAGCTGAGGTTTGC  
 AGCCAGCCTCATCTCTGGTGTACTCAGCTACAAGGCCCTGCTGGACAGCCACTCCATTCCCAGTACTGT  
 GCCAAAGGCCAGCTGTCAGGGCAGCCCTTTGCATGAAGCAATACTATGGGCTCTTCTCCTCTACCGGC  
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 CTGTTCACTCAGTTGAGAAAGATAGTCAAAATGGCTTCCAACGAGGACGAGCGTTTGCCTCCAATTGGCC  
 TGCTGACGTCTGACGGGAGGAGCGAGTGGGCCGAGGCCAGGACGGTCTCGTGAAGACTCCACCAACCG  
 GGACTCGCTGGACATGATTGAGCGCTGCATCTGCCTTGTATGCCTGGACGCGCCAGGAGCGTGGAGCTC  
 AGCGACACCCACAGGGCACTCCAGCTCCTTACGGCGGAGGCTACAGCAAGAACGGGGCAATCGCTGGT  
 ACGACAAGTCCCTGCAGTTTGTGGTGGGCCGAGACGGCACCTGCGGTGTGGTGTGCGAACACTCCCCATT  
 CGATGGCATCGTCTGGTGCAGTGCAGTGCATCTGCTCAAGCACATGACGAGAGCAGCAGGAAGCTG  
 ATCCGAGCAGACTCCGTCAGCGAGTCCCCGCCCGGGAGGCTGCGGTGAAATGCTCCCCGAAATTC  
 AAGGCCACTTAGCCTCCTCGGCAGAAAACCTTCAACGAATAGTAAAGAACCTTGACTTCTGTATAA  
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 GCATACACAGTGCATGGCCATAACAGGGATGGCCATTGACAACCACCTGCTGGCACTGCGGGAGCTGGCC  
 GGGCCATGTGCAAGGAGCTGCCGAGATGTTTATGGATGAAACCTACCTGATGAGCAACCGGTTTGTCT  
 CTCCTACTGCCAGGTGCCACAACCACGGAGATGTTCTGCTGCTATGGTCTGTGGTCCCAATGGGTAT  
 GGTGCCCTGCTACAACCCCGCCAGAGACCATCTTTTCTGCATCTCTAGCTTTCACAGCTGCAAAGAGA  
 CTCTTTCTAGCAAGTTTGCAAAAGCTGTGGAAGAAAGCCTCATTGACATGAGAGACCTCTGCAGTCTGCT  
 GCCGCTACTGAGAGCAAGCCATTGGCAACAAAGGAAAAGCCACGAGGCCAGCCAGGGACACCAACCT

AG**GCGACCG**ACGCGTACGCGCCGCTCGAGCAGAAAACCTCATCTCAGAAGAGGATCTGGCAGCAAATGATATCC  
 TGGATTACAAGGATGACGACGATAAGGTTTAA

**Protein Sequence:**

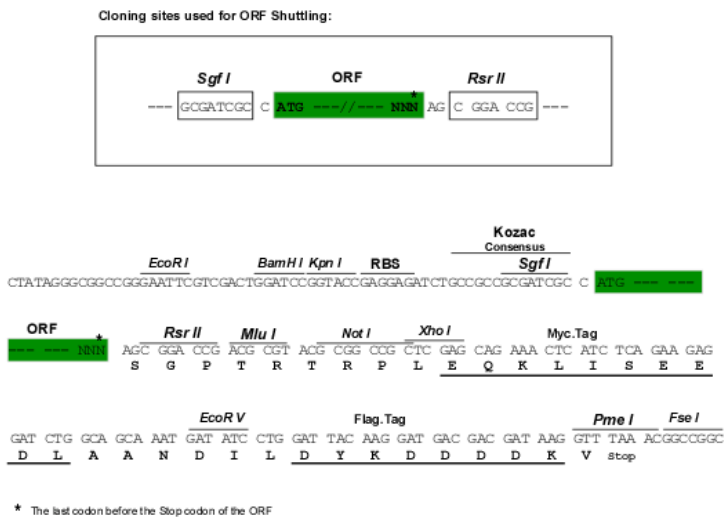
>RC227219 representing NM\_001142929  
 Red=Cloning site Green=Tags(s)

MAAKTPSSEESGLPKLPVPLQQLATYLQCMRHLVSEEQFRKSQAIVQQFGAPGGLGETLQQKLLERQE  
 KTANWVSEYWLNDMYLNNRLALPVNSSPAVIFARQHFPGTDDQLRFAASLISGLVSYKALLDSHSIPTDC  
 AKGQLSGQPLCMKQYYGLFSSYRLPGHTQDTLVAQNSSIMPEPEHVIVACCNQFFVLDVIVNFRRLSEGD  
 LFTQLRKIVKMASNEDERLPPIGLLTSDGRSEWAEARTVLVKDSTNRDSLDMIERICLVLCLDAPGGVEL  
 SDTHRALQLLHGGGYSKNGANRWYDKSLQFVVGRTDGTGCVVCEHSPFDGIVLVQCTEHLKHMTOSSRKL  
 IRADSVSELPAPRRLRWKCSPEIQGHLASSAEKLRIVKLNDFIVYKFDNYGKTFIKKQKCPDAFIQVA  
 LQLAFYRLHRRLVPTYESASIRRFQEGRVNIRSATPEALAFVRAVTDHKAAPASEKLLLLKDAIRAQT  
 AYTVMAITGMAIDNHLLALRELARAMCKELPEMFDETYLMSNRFVLSQVPTTTEMFCYGPVVPNGY  
 GACYNPQPETILFCISSFHCKETSSSKFAKAVEESLIDMRDLCSLLPPTESKPLATKEKATRPSQGHQP

SGP**TRRRLEQKLI**SEEDLAANDILDYKDDDDKV

Restriction Sites: SgfI-RsrII

Cloning Scheme:



ACCN: NM\_001142929

ORF Size: 1890 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\\_001142929.1](#), [NP\\_001136401.1](#)

RefSeq ORF: 1893 bp

Locus ID: 1103

UniProt ID: [P28329](#)

Cytogenetics: 10q11.23

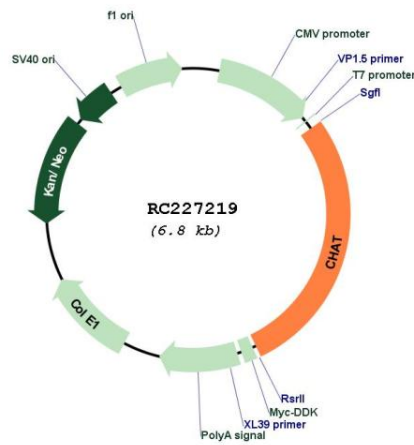
**Protein Families:** Druggable Genome

**Protein Pathways:** Glycerophospholipid metabolism

**MW:** 70.2 kDa

**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 RC227219