

## Product datasheet for **RG222531**

### Choline Acetyltransferase (CHAT) (NM\_020549) Human Tagged ORF Clone

#### Product data:

Product Type:	Expression Plasmids
Product Name:	Choline Acetyltransferase (CHAT) (NM_020549) Human Tagged ORF Clone
Tag:	TurboGFP
Symbol:	CHAT
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:**

>RG222531 representing NM\_020549  
 Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC  
 GCC**CGGATCGCC**

ATGGGGCTGAGGACAGCGAAGAAGAGGGGGCTTGGGGAGGGGGAAATGGAAGAGAGAGGAGGGAGGAG  
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 ACCT

AG**CGGACCC**ACGCGTACGCGGCCGCTCGAG - GFP Tag - GTTTAA

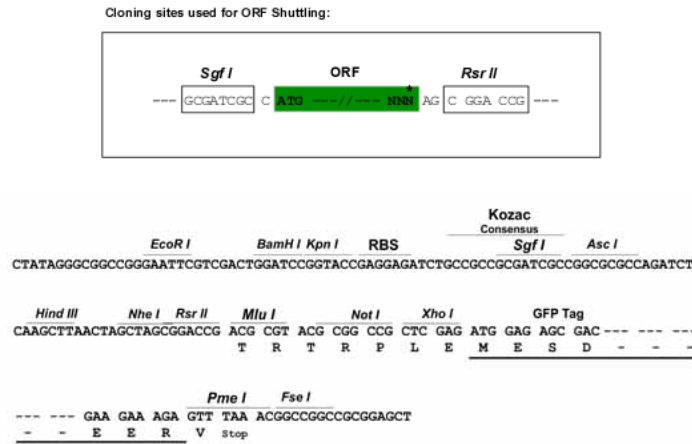
**Protein Sequence:** >RG222531 representing NM\_020549  
 Red=Cloning site Green=Tags(s)

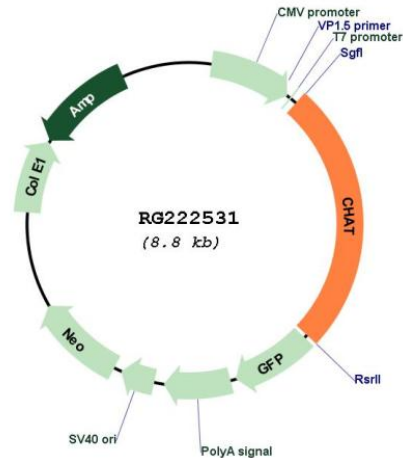
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 PVNSSPAVIFARQHFPGTDDQLRFAASLISGVL SYKALLDSSHIPDCAKPELSGQPLCMKQYYGLFSSY  
 RLPGHTQDTLVAQNSSIMPEPEHVIVACCNQFFVLDVVINFRRLSEGDLFTQLRKIVKMASNEDERLPII  
 GLLTSDGRSEWAEARTVLVKDSTNRDSLMIERICLVLCDGPGGVELSDTHRALQLLHGGGYSKNGANR  
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 IQGHLASSAEKLQRIVKNLDFIVYKFDNYGKTFIKKQKCPDAFIQVALQLAFYRLHRRLVPTYESASIR  
 RFQEGRVDNIRSATPEALAFVRAVTDHKAAPASEKLLLLKDAIRAQTAYTVMAITGMAIDNHLALREL  
 ARAMCKELPEMFDETYLMSNRFVLSTSQVPTTTEMFCYGPVVPNGYGACYNPQPETILFCISSFHSC  
 ETSSSKFAKAVEESLIDMRDLC SLLPPTESKPLATKEKATRPSQGHQP

SGPTRRRLE - GFP Tag - V

**Restriction Sites:** SgfI-RsrII

**Cloning Scheme:**



**Plasmid Map:**


**ACCN:** NM\_020549

**ORF Size:** 2244 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\\_020549.2](#), [NP\\_065574.1](#)

**RefSeq Size:** 2485 bp

**RefSeq ORF:** 2247 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]