

Product datasheet for **RG216924**

Choline Acetyltransferase (CHAT) (NM_020984) Human Tagged ORF Clone

Product data:

Product Type:	Expression Plasmids
Product Name:	Choline Acetyltransferase (CHAT) (NM_020984) 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:

>RG216924 representing NM_020984
 Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC
 GCC**CGATCGCC**

ATGGCAGCAAACTCCCAGCAGTGAGGAGTCTGGGCTGCCAACTGCCCGTGCCCGCTGCAGCAGA
 CCCTGGCCACGTACCTGCAGTGCATGCGACACTTGGTGTCTGAGGAGCAGTTCAGGAAGAGCCAGGCCAT
 TGTGCAGCAGTTTGGGGCCCTGGTGGCCCTCGGCGAGACCCTGCAGCAGAACTCCTGGAGCGCAGGAG
 AAGACAGCCAAGTGGGTGTCTGAGTACTGGCTGAATGACATGTATCTCAACAACCGCCTGGCCCTGCCTG
 TCAACTCCAGCCCTGCCGTGATCTTTGCTCGGCAGCACTTCCCTGGCACCAGTACCAGCTGAGGTTTGC
 AGCCAGCCTCATCTGGTGTACTCAGCTACAAGGCCCTGCTGGCAGCCACTCCATTCCCAGTACTGT
 GCCAAAGGCCAGCTGTCAGGGCAGCCCTTTGCATGAAGCAATACTATGGGCTCTTCTCCTACCAGGC
 TCCCCGGCCATACCAGGACAGCTGGTGGCTCAGAACAGCAGCATCATGCCGGAGCCTGAGCACGTCAT
 CGTAGCCTGCTGCAATCAGTTCTTTGTCTTGGATGTTGTCATTAATTTCCGCCGTCTCAGTGAGGGGGAT
 CTGTTCACTCAGTTGAGAAAGATAGTCAAATGGCTTCCAACGAGGACGAGCGTTTGCCTCCAATTGGCC
 TGCTGACGTCTGACGGGAGGAGCGAGTGGGCCGAGGCCAGGACGGTCTCGTGAAAGACTCCACCAACCG
 GGACTCGCTGGACATGATTGAGCGCTGCATCTGCCTTGTATGCCTGGACGCGCCAGGAGCGTGGAGCTC
 AGCGACACCCACAGGGCACTCCAGCTCCTTACGGCGGAGGCTACAGCAAGAACGGGGCCAAATCGTGGT
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 AAGGCCACTTAGCCTCCTCGGCAGAAAACTTCAACGAATAGTAAGAACCTTGACTTCAATTGTCTATAA
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 TCCAGGAGGGACGCGTGGACAACATCAGATCGGCCACTCCAGAGGCACTGGCTTTTGTGAGAGCCGTGAC
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 GCATACACAGTCAAGCCATAACAGGGATGGCCATTGACAACCACCTGCTGGCACTGCGGGAGCTGGCC
 GGGCCATGTGCAAGGAGCTGCCGAGATGTTTATGGATGAAACCTACCTGATGAGCAACCGTTTGTCTCT
 CTCCTACTAGCCAGGTGCCACAACCACGGAGATGTTCTGCTGCTATGGTCTGTGGTCCCAATGGGTAT
 GGTGCCTGCTACAACCCAGCCAGAGACCATCCTTTTCTGCATCTCTAGCTTTCACAGCTGCAAGAGA
 CTCTCTTAGCAAGTTTGCAAAAGCTGTGGAAGAAAGCCTCATTGACATGAGAGACCTCTGCAGTCTGCT
 GCCGCTACTGAGAGCAAGCCATTGGCAACAAAGGAAAAGCCACGAGGCCAGCCAGGGACACCAACT

AG**CGGACCG**ACGCGTACGCGGCCGCTCGAG - GFP Tag - GTTTAA

Protein Sequence:

>RG216924 representing NM_020984
 Red=Cloning site Green=Tags(s)

MAAKTPSSEESGLPKLPVPLQQLATYLQCMRHLVSEEQFRKSQAIIVQQFGAPGGLGETLQQKLLERQE
 KTANWVSEYWLNDMYLNNRLALPVNSSPAVIFARQHFPGTDDQLRFAASLISGLVSYKALLDSHSIPTDC
 AKGQLSGQPLCMKQYYGLFSSYRLPGHTQDTLVAQNSSIMPEPEHVIVACCNQFFVLDVVINFRRLSEGD
 LFTQLRKIVKMASNEDERLPIIGLLTSDGRSEWAEARTVLVKDSTNRDSLDMIERICLVLCDAPGGVEL
 SDTHRALQLLHGGYSKNGANRWYDKSLQFVVGVDGTCGVVCEHSPFDGIVLVQCTEHLKHMTQSSRKL
 IRADSVSELPAPRRLRWKCSPEIQGHLASSAEKLRIVKNLDFIVYKFDNYGKTFIKKQKCPDAFIQVA
 LQLAFYRLHRRLLVPTYESASIRRFQEGRVDNIRSATPEALAFVRAVTDHKAAPASEKLLLLKDAIRAQT
 AYTVMAITGMAIDNHLALRELAMCKELPEMFDETYLMSNRVFLSTSQVPTTTEMFCCYGPVVPNGY
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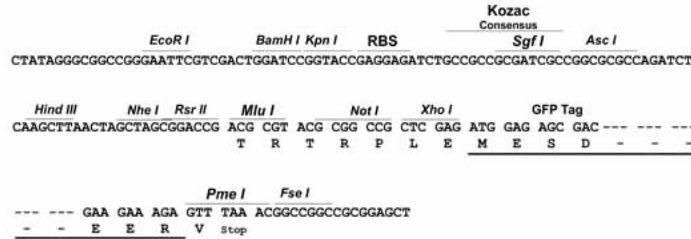
SGP**TRRRLE** - GFP Tag - V

Restriction Sites:

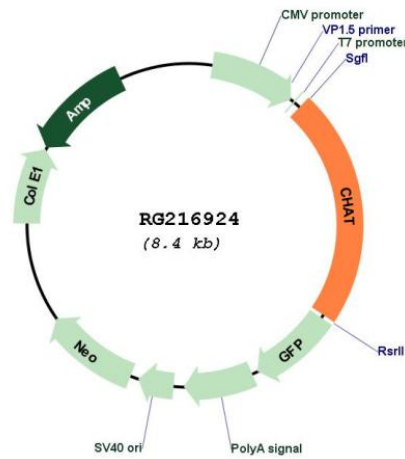
Sgfl-RsrII

Cloning Scheme:

Cloning sites used for ORF Shuttling:



Plasmid Map:



ACCN: NM_020984
 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:	<ol style="list-style-type: none"> 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_020984.3 , NP_066264.3
RefSeq Size:	2124 bp
RefSeq ORF:	1893 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]