

Product datasheet for **RG222005**

GTP cyclohydrolase 1 (GCH1) (NM_001024070) Human Tagged ORF Clone

Product data:

Product Type:	Expression Plasmids
Product Name:	GTP cyclohydrolase 1 (GCH1) (NM_001024070) Human Tagged ORF Clone
Tag:	TurboGFP
Symbol:	GTP cyclohydrolase 1
Synonyms:	DYT5; DYT5a; DYT14; GCH; GTP-CH-1; GTPCH1; HPABH4B
Mammalian Cell Selection:	Neomycin
Vector:	pCMV6-AC-GFP (PS100010)
E. coli Selection:	Ampicillin (100 ug/mL)
ORF Nucleotide Sequence:	>RG222005 representing NM_001024070 Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC
GCC**CGATCGCC**

ATGGAGAAGGGCCCTGTGCGGGCACCGCGGAGAAGCCGCGGGCGCCAGGTGCAGCAATGGGTTCCCCG
AGCGGGATCCGCCGCGGCCCGGGCCAGCAGGCCGCGGAGAAGCCCCGCGGCCGAGGCCAAGAGCGC
GCAGCCCCGGACGGCTGGAAGGGCGAGCGCCCCGAGCAGGAGGATAACGAGCTGAACCTCCCTAAC
CTGGCAGCCGCTACTCGTCCATCCTGAGCTCGCTGGGCGAGAACCCCCAGCGGCAAGGGCTGCTCAAGA
CGCCCTGGAGGGCGCCCTCGCCATGCAGTTCTTACCAAGGGCTACCAGGAGACCATCTCAGATGTCCT
AAACGATGCTATATTTGATGAAGATCATGATGAGATGGTATTGTGAAGGACATAGACATGTTTTCCATG
TGTGAGCATCACTTGGTTCCATTTGTTGGAAAGGTCCATATTGGTTATCTTCTAACAAGCAAGTCCCTG
GCCTCAGCAAACCTTGCAGGATTGTAGAAATCTATAGTAGAAGACTACAAGTTCAGGAGCGCCTTACAAA
ACAAATTGCTGTAGCAATCACGGAAGCCTTGGCGCCTGCTGGAGTCGGGGTAGTGGTTGAAGCAACGAAG
TCAAATAAATAATAAAGGTTGAGCCCTCTACTTTCTTCTTGGCACCTTTTGTGGCAATATTAAG

ACGCGTACGCGGGCGCTCGAG - GFP Tag - GTTTAA



[View online »](#)

Protein Sequence: >RG222005 representing NM_001024070
 Red=Cloning site Green=Tags(s)

MEKGPVRAPAEKPRGARCSTNGFFPERDPPRPGPSRPAEKPPRPEAKSAQPADGWKGERPRSEEDNELNLPN
 LAAAYSSILSSLGENPQRQGLLKPWRAASAMQFFTKGYQETISDVLNDAIFDEHDHDEMIVKIDIMFMS
 CEHHLVPFVGKVHIGYLPNKQVLGLSKLARIVEIYSRRLQVQERLTKQIAVAITEALRPAGVGVVVEATK
 SNKYNKGLSPLLSSCHLFVAILK

TRTRPLE - GFP Tag - V

Restriction Sites: SgfI-MluI

Cloning Scheme:



ACCN: NM_001024070

ORF Size: 699 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_001024070.2](#)

RefSeq Size: 1940 bp

RefSeq ORF: 702 bp

Locus ID: 2643

UniProt ID: [P30793](#)

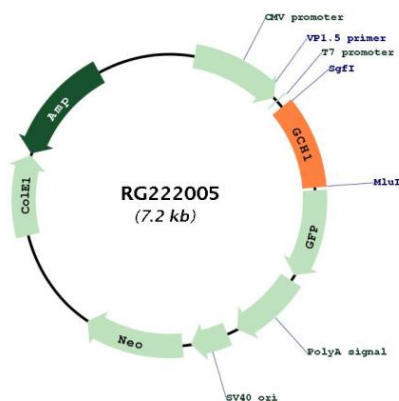
Cytogenetics: 14q22.2

Protein Families: Druggable Genome

Protein Pathways: Folate biosynthesis, Metabolic pathways

Gene Summary: This gene encodes a member of the GTP cyclohydrolase family. The encoded protein is the first and rate-limiting enzyme in tetrahydrobiopterin (BH4) biosynthesis, catalyzing the conversion of GTP into 7,8-dihydroneopterin triphosphate. BH4 is an essential cofactor required by aromatic amino acid hydroxylases as well as nitric oxide synthases. Mutations in this gene are associated with malignant hyperphenylalaninemia and dopa-responsive dystonia. Several alternatively spliced transcript variants encoding different isoforms have been described; however, not all variants give rise to a functional enzyme. [provided by RefSeq, Jul 2008]

Product images:



Circular map for RG222005