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Product datasheet for RC224968

GTP cyclohydrolase 1 (GCH1) (NM_001024024) Human Tagged ORF Clone

Product data:

Product Type:	Expression Plasmids
Product Name:	GTP cyclohydrolase 1 (GCH1) (NM_001024024) Human Tagged ORF Clone
Tag:	Myc-DDK
Symbol:	GTP cyclohydrolase 1
Synonyms:	DYT5; DYT5a; DYT14; GCH; GTP-CH-1; GTPCH1; HPABH4B
Mammalian Cell Selection:	Neomycin
Vector:	pCMV6-Entry (PS100001)
E. coli Selection:	Kanamycin (25 ug/mL)
ORF Nucleotide Sequence:	>RC224968 ORF sequence Red=Cloning site Blue=ORF Green=Tags(s) TTTTGTAATACGACTCACTATAGGGCGGCCGGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC GCCGCGATCGCC ATGGAGAAGGGCCCTGTGCGGGCACCGGCGGAGAAGCCGCGGGGCGCCAGGTGCAGCAATGGGTTCCCCG AGCGGGATCCGCCGCGGCCCGGGCCCAGCAGGCCGGCGGAGAAGCCCCCGCGGCCCGAGGCCAAGAGCGC GCAGCCCGCGGACGGCTGGAAGGGCGAGCGGCCCCGCAGCGAGGAGGATAACGAGCTGAACCTCCCTAAC CTGGCAGCCGCCTACTCGTCCATCCTGAGCTCGCTGGGCGAGAACCCCCAGCGGCAAGGGCTGCTCAAGA CGCCCTGGAGGGCGGCCTCGGCCATGCAGTTCTTCACCAAGGGCTACCAGGAGACCATCTCAGATGTCCT AAACGATGCTATATTTGATGAAGATCATGATGAGATGGTGATTGTGAAGGACATAGACATGTTTTCCATG TGTGAGCATCACTTGGTTCCATTTGTTGGAAAGGTCCATATTGGTTATCTTCCTAACAAGCAAGTCCTTG GCCTCAGCAAACTTGCGAGGATTGTAGAAATCTATAGTAGAAGACTACAAGTTCAGGAGCGCCTTACAAA ACAAATTGCTGTAGCAATCACGGAAGCCTTGCGGCCTGCTGGAGTCGGGGTAGTGGTTGAAGCAACACAC ATGTGTATGGTAATGCGAGGTGTACAGAAAATGAACAGCAAAACTGTGACCAGCACAATGTTGGGTGTGT TCCGGGAGGATCCAAAGACTCGGGAAGAGTTCCTGACTCTCATTAGGAGC ACGCGTACGCGGCCGCTCGAGCAGAAACTCATCTCAGAAGAGGATCTGGCAGCAAATGATATCCTGGATT ACAAGGATGACGACGATAAGGTTTAA

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Protein Sequence:

>RC224968 protein sequence
Red=Cloning site Green=Tags(s)

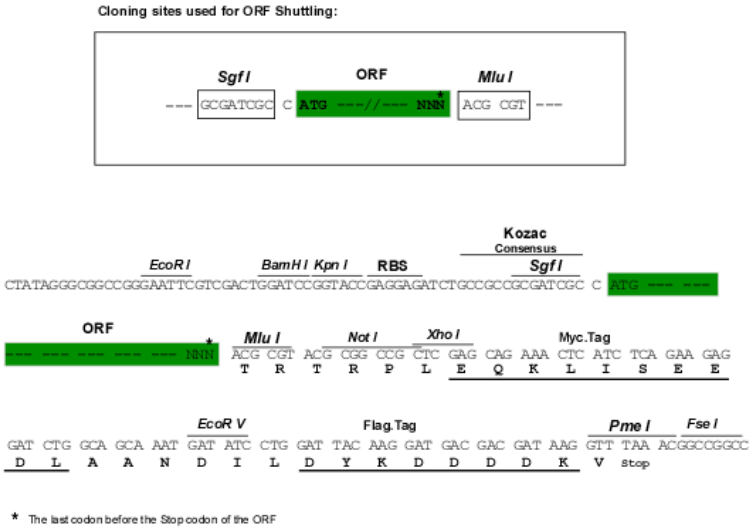
MEKGPVRAPAEKPRGARCSNGFPERDPPRPGPSRPAEKPPRPEAKSAQPADGWKGERPRSEEDNELNLPN
LAAAYSSILSSLGENPQRQGLLKTPWRAASAMQFFTKGYQETISDVLNDAIFDEDHDEMVIVKDIDMFSM
CEHHLVPFVGKVHIGYLPNKQVLGLSKLARIVEIYSRRLQVQERLTKQIAVAITEALRPAGVGVVVEATH
MCMVMRGVQKMNSKTVTSTMLGVFREDPKTREEFLTLIRS

TRTRPLEQKLISEEDLAANDILDYKDDDDKV

Chromatograms: https://cdn.origene.com/chromatograms/mk6171_f05.zip

Restriction Sites: SgfI-MluI

Cloning Scheme:



ACCN: NM_001024024

ORF Size: 750 bp

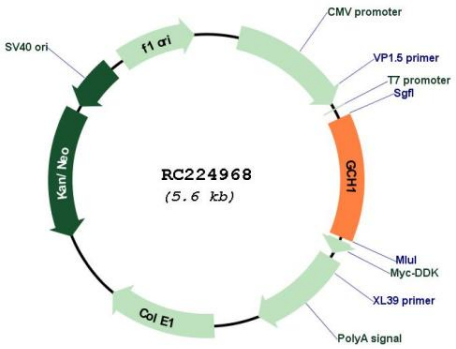
OTI Disclaimer: The molecular sequence of this clone aligns with the gene accession number as a point of reference only. However, individual transcript sequences of the same gene can differ through naturally occurring variations (e.g. polymorphisms), each with its own valid existence. This clone is substantially 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.

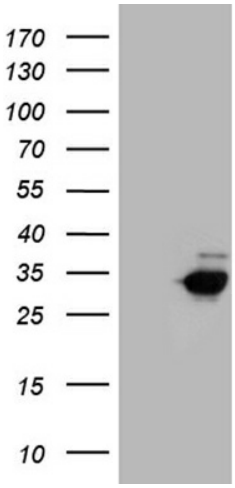
Components: The ORF clone is ion-exchange column purified and shipped in a 2D barcoded Matrix tube containing 10ug of transfection-ready, dried plasmid DNA (reconstitute with 100 ul of water).

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_001024024.1, NP_001019195.1
RefSeq Size:	1995 bp
RefSeq ORF:	753 bp
Locus ID:	2643
UniProt ID:	P30793
Cytogenetics:	14q22.2
Protein Families:	Druggable Genome
Protein Pathways:	Folate biosynthesis, Metabolic pathways
MW:	27.9 kDa
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]

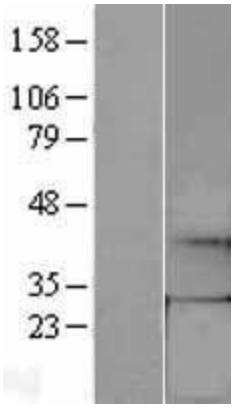
Product images:



Circular map for RC224968



HEK293T cells were transfected with the pCMV6-ENTRY control (Cat# [PS100001], Left lane) or pCMV6-ENTRY GCH1 (Cat# RC224968, Right lane) cDNA for 48 hrs and lysed. Equivalent amounts of cell lysates (5 ug per lane) were separated by SDS-PAGE and immunoblotted with anti-GCH1 (Cat# [TA810265])(1:2000). Positive lysates [LY422611] (100ug) and [LC422611] (20ug) can be purchased separately from OriGene.



Western blot validation of overexpression lysate (Cat# [LY422611]) using anti-DDK antibody (Cat# [TA50011-100]). Left: Cell lysates from un-transfected HEK293T cells; Right: Cell lysates from HEK293T cells transfected with RC224968 using transfection reagent MegaTran 2.0 (Cat# [TT210002]).