

## Product datasheet for **RG200614**

### **FH (NM\_000143) Human Tagged ORF Clone**

#### **Product data:**

|                           |                                       |
|---------------------------|---------------------------------------|
| Product Type:             | Expression Plasmids                   |
| Product Name:             | FH (NM_000143) Human Tagged ORF Clone |
| Tag:                      | TurboGFP                              |
| Symbol:                   | FH                                    |
| Synonyms:                 | FMRD; HLRCC; HsFH; LRCC; MCL; MCUL1   |
| Mammalian Cell Selection: | Neomycin                              |
| Vector:                   | pCMV6-AC-GFP (PS100010)               |
| E. coli Selection:        | Ampicillin (100 ug/mL)                |



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**ORF Nucleotide Sequence:**

>RG200614 representing NM\_000143  
 Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC  
 GCC**GCGATCGCC**

ATGTACCGAGCACTTCGGCTCCTCGCGCTCGCGTCCCCTCGTGCGGGTCCAGCCGAGCCTTAGCTT  
 CGGCTCCCGCTTGGGTGGCGCGCCGTGCCCTCGTTTTGGCCTCCGAACGCGGCTCGAATGGCAAGCCA  
 AAATTCCTTCCGGATAGAATATGATACCTTTGGTGAAGTAAAGGTGCCAATGATAAGTATTATGGCGCC  
 CAGACCGTGAGATCTACGATGAAGTTAAGATTGGAGGTGTACAGAACGCATGCCAACCCAGTTATTA  
 AAGCTTTTGGCATCTTGAAGCGAGCGGCCGTGAAGTAAACCAGGATTATGGTCTTGATCCAAAGATTGC  
 TAATGCAATAATGAAGGCAGCAGATGAGGTAGCTGAAGTAAATTAATGATCATTTTCTCTCGTGGTA  
 TGGCAGACTGGATCAGGAACTCAGACAAATATGAATGAAATGAAGTCATTAGCAATAGAGCAATTGAAA  
 TGTTAGGAGGTGAAGTTGGCAGCAAGATACCTGTGCATCCCAACGATCATGTTAATAAAAGCCAGAGCTC  
 AAATGATACTTTTCCACAGCAATGCACATTGCTGCTGCAATAGAAGTTCATGAAGTACTGTTACCAGGA  
 CTACAGAAAGTTACATGATGCTCTTGATGCAAAAATCCAAAGAGTTTGCACAGATCATCAAGATTGGACGTA  
 CTCATACTCAGGATGCTGTTCCACTTACTCTTGGCAGGAATTTAGTGGTTATGTTCAACAAGTAAATA  
 TGCAATGACAAGAATAAAAGCTGCCATGCCAAGAATCTATGAGCTCGCAGCTGGAGGCACTGCTGTTGGT  
 ACAGGTTTAAATACTAGAATTGGCTTGGCAGAAAAGGTTGCTGCAAAAAGTGGCTGCACCTACAGGCTTGC  
 CTTTTGCTACTGCTCCGAATAAATTTGAAGCTCTGGCTGCTCATGACGCTCTGGTTGAGCTCAGTGGAGC  
 CATGAACACTACTGCCTGCAGTCTGATGAAGATAGCAAATGATATTCGATTTTGGGTTCTGGTCTCGG  
 TCAGGTCTGGGAGAATTGATCTTGCCTGAAAATGAACCAGGAAGCAGTATCATGCCAGGCAAGGTGAACC  
 CTACTCAGTGTGAAGCAATGACCATGGTTGCAGCCCAAGTCATGGGGAACCATGTTGCTCACTGTCGG  
 AGGCAGCAATGGACATTTTGAAGTTGAATGTTTTCAAGCCAATGATGATTAAAAATGTGTTACACTAGCC  
 AGGCTGCTGGGGATGCTTCAGTTTCTTTACAGAAAATGCGTGGTGGGAATCCAGGCCAATACAGAAA  
 GGATCAACAAGCTGATGAATGAGTCTCTAATGTTGGTGACAGCTCTCAATCCTCATATAGGGTATGACAA  
 GGCAGCAAAGATTGCTAAGACAGCACACAAAAATGGATCAACCTTAAAGGAAAAGTCTATCGAAGTTGGC  
 TATCTCACAGCAGAGCAGTTTACGAATGGGTAACCTAAGGACATGCTGGTCCAAAG

**ACGCGTACGCGGCCGCTCGAG** – GFP Tag – GTTTAA

**Protein Sequence:**

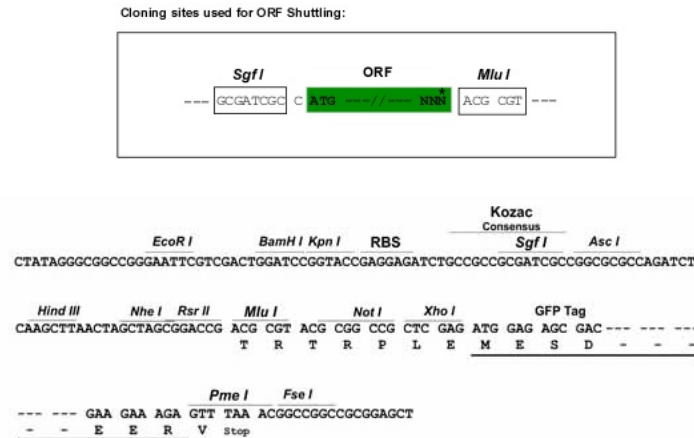
>RG200614 representing NM\_000143  
 Red=Cloning site Green=Tags(s)

MYRALRLLARSRPLVRPAAALASAPLGGAAVPSFWPPNAARMASQNSFRIEYDTFGELKVPNDKYYGA  
 QTVRSTMNFKIGGVTERMPVPIKAFGILKRAAAEVNQDYGLDPKIANAIMKAADEVAEGLKNDHFPLVV  
 WQTGSGTQTNMNVNEVISNRAIEMLGELGSKIPVHPNDHVNKSQSSNDFPTAMHIAAAIEVHEVLLPG  
 LQKLHDALDAKSKEFAQIIKIGRTHTQDAVPLTLGQEFSGYVQVKYAMTRIKAAMPRIYELAAGGTAVG  
 TGLNTRIGFAEKVAAKVAALTGLPFVTAPNKFEALAAHDALVELSGAMNTTACSLMKIANDIRFLGSGPR  
 SGLGELILPENEPGSSIMPGKVNPTQCEAMTMVAAQVMGNHVAVTVGGSNGHFELNVFKPMMIKNVLHSA  
 RLLGDASVSFTENCVVGIQANTERINKLMNESLMLVTALNPHIGYDKAAKIAKTAHKNSTLKETAIELG  
 YLTAEQFDEWVKPKDMLGPK

**TRTRPLE** – GFP Tag – V

**Restriction Sites:**

Sgfl-MluI

**Cloning Scheme:**


**ACCN:** NM\_000143

**ORF Size:** 1530 bp

**OTI Disclaimer:** Due to the inherent nature of this plasmid, standard methods to replicate additional amounts of DNA in E. coli are highly likely to result in mutations and/or rearrangements. Therefore, OriGene does not guarantee the capability to replicate this plasmid DNA. Additional amounts of DNA can be purchased from OriGene with batch-specific, full-sequence verification at a reduced cost. Please contact our customer care team at [custsupport@origene.com](mailto:custsupport@origene.com) or by calling 301.340.3188 option 3 for pricing and delivery.

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.

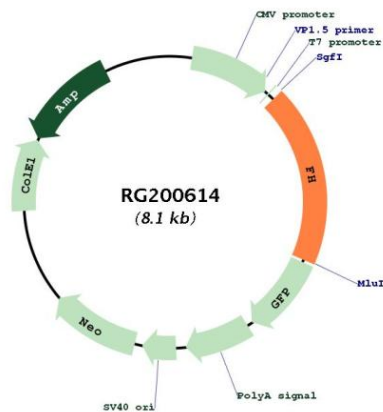
**Components:** The ORF clone is ion-exchange column purified and shipped in a 2D barcoded Matrix tube containing 10ug of transfection-ready, dried plasmid DNA (reconstitute with 100 ul of water).

- 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\\_000143.4](#)

|                   |   |
|-------------------|---|
| RefSeq Size:      | 1791 bp   |
| RefSeq ORF:       | 1533 bp   |
| Locus ID:         | 2271  |
| UniProt ID:       | <a href="#">P07954</a>  |
| Cytogenetics:     | 1q43  |
| Domains:          | lyase_1   |
| Protein Families: | Druggable Genome  |
| Protein Pathways: | Citrate cycle (TCA cycle), Metabolic pathways, Pathways in cancer, Renal cell carcinoma   |
| Gene Summary:     | The protein encoded by this gene is an enzymatic component of the tricarboxylic acid (TCA) cycle, or Krebs cycle, and catalyzes the formation of L-malate from fumarate. It exists in both a cytosolic form and an N-terminal extended form, differing only in the translation start site used. The N-terminal extended form is targeted to the mitochondrion, where the removal of the extension generates the same form as in the cytoplasm. It is similar to some thermostable class II fumarases and functions as a homotetramer. Mutations in this gene can cause fumarase deficiency and lead to progressive encephalopathy. [provided by RefSeq, Jul 2008] |

### Product images:



Circular map for RG200614