

## Product datasheet for **RG232899**

### MLH1 (NM\_001258274) Human Tagged ORF Clone

#### Product data:

|                           |  |
|---------------------------|--|
| Product Type:             | Expression Plasmids                        |
| Product Name:             | MLH1 (NM_001258274) Human Tagged ORF Clone |
| Tag:                      | TurboGFP                                   |
| Symbol:                   | MLH1                                       |
| Synonyms:                 | COCA2; FCC2; hMLH1; HNPCC; HNPCC2; MMRCS1  |
| Mammalian Cell Selection: | Neomycin                                   |
| Vector:                   | pCMV6-AC-GFP (PS100010)                    |
| E. coli Selection:        | Ampicillin (100 ug/mL)                     |



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**ORF Nucleotide Sequence:**

>RG232899 representing NM\_001258274  
 Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC  
 GCCGCGATCGCC

ATGAATGGTTACATATCCAATGCAAACACTCAGTGAAGAAGTGCATCTTCTTACTTTCATCAACCATC  
 GTCTGGTAGAATCAACTTCTTGAGAAAAGCCATAGAAACAGTGTATGCAGCCTATTTGCCCAAAAACAC  
 ACACCCATTCTGTACCTCAGTTTAGAAATCAGTCCCCAGAATGTGGATGTTAATGTGCACCCCAAAAAG  
 CATGAAGTTCACTTCTGCACGAGGAGAGCATCCTGGAGCGGGTGCAGCAGCACATCGAGAGCAAGCTCC  
 TGGGCTCAAATTCCTCCAGGATGTACTTCAACCCAGACTTTGCTACCAGGACTTGTGGCCCTCTGGGGA  
 GATGGTAAATCCACAACAAGTCTGACCTCGTCTTCTACTTCTGGAAGTAGTGATAAGGTCTATGCCAC  
 CAGATGGTTCGTACAGATTCCCAGGAAACAGAAGCTTGATGCATTCTGCAGCCTCTGAGCAAACCCCTGT  
 CCAGTCAGCCCCAGGCCATTGTACAGAGGATAAGACAGATATTTCTAGTGGCAGGGCTAGGCAGCAAGA  
 TGAGGAGATGCTTGAACCCCAGCCCTGCTGAAGTGGCTGCCAAAATCAGAGCTTGGAGGGGATACA  
 ACAAAAGGGGACTTCAGAAATGTCAGAGAAGAGAGGACCTACTTCCAGCAACCCCAAAAAGAGACATCGGG  
 AAGATTCTGATGTGAAATGGTGAAGATGATCCCGAAAGGAAATGACTGCAGCTTGTACCCCCCGGAG  
 AAGGATCATTAACCTCACTAGTGTTTTGTAGTCTCCAGGAAGAAATTAATGAGCAGGGACATGAGGTTCTC  
 CGGGAGATGTTGCATAACCCTCCTTCTGGGCTGTGTGAATCCTCAGTGGGCTTGGCAGCATCAAA  
 CCAAGTTATACCTTCTCAACACCACCAAGCTTAGTGAAGAAGTGTCTACCAGATACTCATTATGATTT  
 TGCCAATTTGGTGTCTCAGGTATCGGAGCCAGCACCCTCTTTGACCTTGCATGCTTGCCCTAGAT  
 AGTCCAGAGAGTGGCTGGACAGAGGAAGATGGTCCAAAGAAGGACTTGCATGATGATTGTTGAGTTTC  
 TGAAGAAGAAGGCTGAGATGCTTGCAGACTATTTCTCTTTGAAATGATGAGGAAGGAACTGATTGG  
 ATTACCCCTTCTGATTGACAACATGTGCCCTTTGGAGGACTGCCTATCTTCACTTCTCGACTAGCC  
 ACTGAGGTGAATTTGGACGAAGAAAAGGAATGTTTTGAAAGCCTCAGTAAAGAATGCGCTATGTTCTATT  
 CCATCCGGAAGCAGTACATATCTGAGGAGTCGACCCTCTCAGGCCAGCAGAGTGAAGTGCCTGGCTCCAT  
 TCCAAACTCCTGGAAGTGGACTGTGGAACACATTGTCTATAAAGCCTTGCCTCACACATTCTGCCTCCT  
 AAACATTTACAGAAGATGAAATATCCTGCAGCTTGCTAACCTGCCTGATCTATACAAAGTCTTTGAGA  
 GGTGT

ACGCGTACGCGGCCGCTCGAG - GFP Tag - GTTTAA

**Protein Sequence:**

>RG232899 representing NM\_001258274  
 Red=Cloning site Green=Tags(s)

MNGYISNANYSVKKCIFLLFINHRLVESTSLRKAJETVYAAAYLPKNTHPFLYL SLEISPQNVDVNVHPTK  
 HEVHFLHEESILERVQQHIESKLLGSNSSRMYFTQTLPLAGPSGEMVKSTTSLTSSSTS GSSDKVYAH  
 QMVRTDSREQLDAFLQPLSKPLSSQPQAI VTEDKTDISSGRARQQDEEMLELPAPAEVAANKQSLEGDT  
 TKGTSEMSEKRGPTSSNPRKRHRESDVEMVEDDSRKEMTAACTPRRRIINLTVLSLQEEINEQGHEVL  
 REMLHNHSFVGCVNPQWALAQHQTKLYLLNNTKLSEELFYQIL IYDFANFGVLRRLSEPAFLFDLAMLALD  
 SPESGWTEEDGPKELAEYIVEFLKKAEMLADYF SLEIDEEGNLIGLPLLIDNYVPPLEGLPIFILRLA  
 TEVNWDEEKECFESLSKECAMFYSIRKQYI SEESTLSGQQSEVPGSIPNSWKWTVHEHIVYKALRSHILPP  
 KHFTEDGNILQLANLPDLYKVFERC

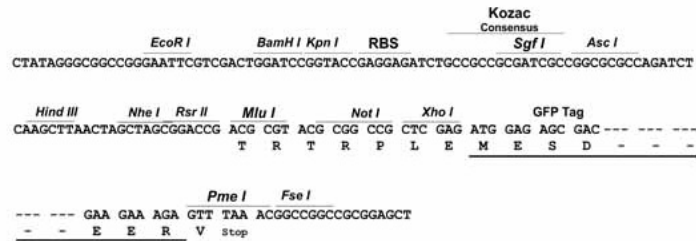
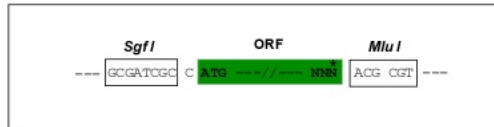
TRTRPLE - GFP Tag - V

**Restriction Sites:**

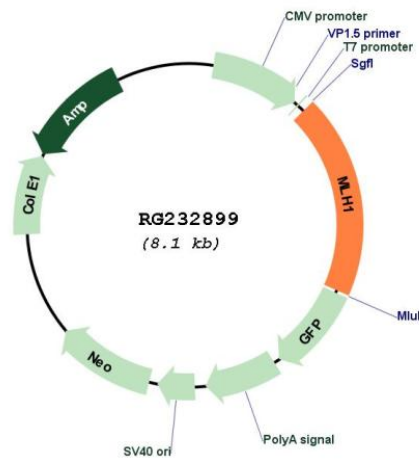
Sgfl-MluI

## Cloning Scheme:

Cloning sites used for ORF Shutting:



## Plasmid Map:



|                               |   |
|-------------------------------|---|
| <b>ACCN:</b>                  | NM_001258274  |
| <b>ORF Size:</b>              | 1545 bp   |
| <b>OTI Disclaimer:</b>        | 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. <a href="#">More info</a>  |
| <b>OTI Annotation:</b>        | This clone was engineered to express the complete ORF with an expression tag. Expression varies depending on the nature of the gene.  |
| <b>Components:</b>            | 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).  |
| <b>Reconstitution Method:</b> | <ol style="list-style-type: none"><li>1. Centrifuge at 5,000xg for 5min.</li><li>2. Carefully open the tube and add 100ul of sterile water to dissolve the DNA.</li><li>3. Close the tube and incubate for 10 minutes at room temperature.</li><li>4. Briefly vortex the tube and then do a quick spin (less than 5000xg) to concentrate the liquid at the bottom.</li><li>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.</li></ol>   |
| <b>RefSeq:</b>                | <a href="#">NM_001258274.2</a>  |
| <b>RefSeq Size:</b>           | 2623 bp   |
| <b>RefSeq ORF:</b>            | 1548 bp   |
| <b>Locus ID:</b>              | 4292  |
| <b>UniProt ID:</b>            | <a href="#">P40692</a>  |
| <b>Cytogenetics:</b>          | 3p22.2  |
| <b>Protein Families:</b>      | Druggable Genome  |
| <b>Protein Pathways:</b>      | Colorectal cancer, Endometrial cancer, Mismatch repair, Pathways in cancer  |
| <b>Gene Summary:</b>          | The protein encoded by this gene can heterodimerize with mismatch repair endonuclease PMS2 to form MutL alpha, part of the DNA mismatch repair system. When MutL alpha is bound by MutS beta and some accessory proteins, the PMS2 subunit of MutL alpha introduces a single-strand break near DNA mismatches, providing an entry point for exonuclease degradation. The encoded protein is also involved in DNA damage signaling and can heterodimerize with DNA mismatch repair protein MLH3 to form MutL gamma, which is involved in meiosis. This gene was identified as a locus frequently mutated in hereditary nonpolyposis colon cancer (HNPCC). [provided by RefSeq, Aug 2017] |