

## Product datasheet for **RC201607**

### **MLH1 (NM\_000249) Human Tagged ORF Clone**

#### **Product data:**

Product Type:	Expression Plasmids
Product Name:	MLH1 (NM_000249) Human Tagged ORF Clone
Tag:	Myc-DDK
Symbol:	MLH1
Synonyms:	COCA2; FCC2; hMLH1; HNPCC; HNPCC2; MMRCS1
Mammalian Cell Selection:	Neomycin
Vector:	pCMV6-Entry (PS100001)
E. coli Selection:	Kanamycin (25 ug/mL)



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**ORF Nucleotide Sequence:**

>RC201607 ORF sequence  
 Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC  
 GCC**CGCATCGCC**

ATGTCGTTGCGTGGCAGGGGTTATTCGGCGGCTGGACGAGACAGTGGTGAACCGCATCGCGCGGGGGAAG  
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 TCAAGTGATTGTTAAAGAGGGAGGCCTGAAGTTGATTCAGATCCAAGACAATGGCACCGGGATCAGGAAA  
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 GAAAACAGCTGATGAAAGTGTGCATACAGAGCAAGTTACTCAGATGGAAAAGTAAAGCCCTCTCTAAA  
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 TGGCTCACACATTCTGCCTCCTAAACATTTACAGAAGATGAAATATCCTGCAGCTTGCTAACCTGCC  
 TGATCTATACAAAGTCTTTGAGAGGTGT

**ACGCGT**ACGCGGCCGCTCGAGCAGAAACTCATCTCAGAAGAGGATCTGGCAGCAAATGATATCCTGGATT  
 ACAAGGATGACGACGATAAGGTTTAA

**Protein Sequence:** >RC201607 protein sequence  
Red=Cloning site Green=Tags(s)

```
MSFVAGVIRRLDETVVNRIAAGEVIQRPANAIEKMIENCLDAKSTSIQVIVKEGGLKLIQIQDNGTGIRK
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PCAGNQGTQITVEDLFYNIATRRKALKNPSEYEGKILEVVGRYSVHNAGISFSVKKQGETVADVRTLPA
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GLAGPSGEMVKSTTSLTSSSTSGSSDKVYAHQMVRTDSREQKLD AFLQPLSKPLSSQPQAI VTE DKTDIS
SGRARQQDEEMLELPAPAEVAANKQSLEGDTTKGTSEMSEKRGPTSSNPRKRHRESDVEMVEDDSRKEM
TAACTPRRRIINLTSVLSLQEEINEQGHEVLREMLHNHSFVGCVPQWALAQHQTKLYLLNTTKLSEELF
YQILYDFANFVLRLEPAPLFDLAMLALDSPESGWTEEDGPKLEAEYIVEFLKKAEMLADYFSL E I
DEEENLIGLPLLIDNYVPPLEGLPIFILRLATEVNWDEEKECFESLSKECAMFY S I R K Q Y I S E E T L S G Q
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```

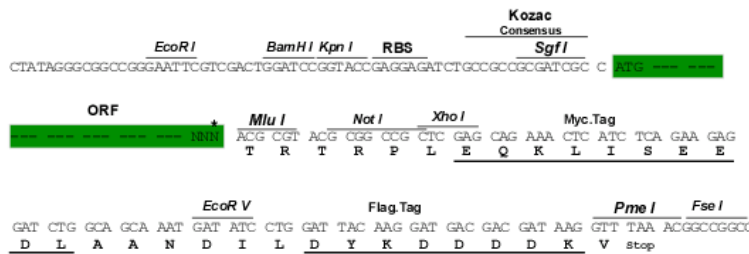
TRTRPLEQKLI SEEDLAANDILDYKDDDDKV

**Chromatograms:** [https://cdn.origene.com/chromatograms/mk6202\\_a06.zip](https://cdn.origene.com/chromatograms/mk6202_a06.zip)

**Restriction Sites:** Sgfl-MluI

**Cloning Scheme:**

Cloning sites used for ORF Shuttling:



\* The last codon before the Stop codon of the ORF

**ACCN:** NM\_000249

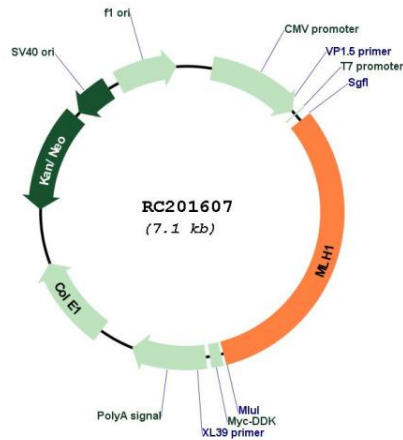
**ORF Size:** 2268 bp

**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](#)

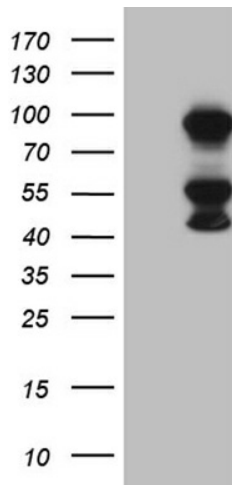
**OTI Annotation:** This clone was engineered to express the complete ORF with an expression tag. Expression varies depending on the nature of the gene.

<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>Note:</b>	Plasmids are not sterile. For experiments where strict sterility is required, filtration with 0.22um filter is required.
<b>RefSeq:</b>	<a href="#">NM_000249.4</a>
<b>RefSeq Size:</b>	2662 bp
<b>RefSeq ORF:</b>	2271 bp
<b>Locus ID:</b>	4292
<b>UniProt ID:</b>	<a href="#">P40692</a>
<b>Cytogenetics:</b>	3p22.2
<b>Domains:</b>	DNA_mis_repair, HATPase_c
<b>Protein Families:</b>	Druggable Genome
<b>Protein Pathways:</b>	Colorectal cancer, Endometrial cancer, Mismatch repair, Pathways in cancer
<b>MW:</b>	84.6 kDa
<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]

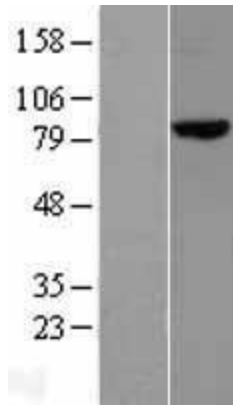
Product images:



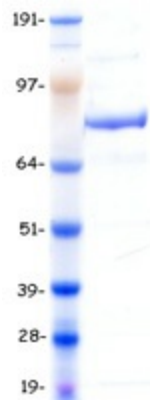
Circular map for RC201607



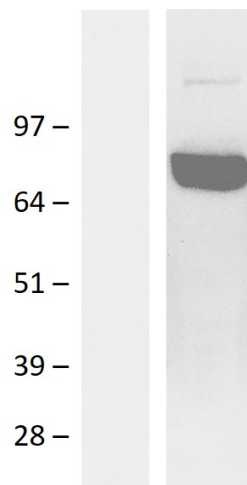
HEK293T cells were transfected with the pCMV6-ENTRY control (Cat# [PS100001], Left lane) or pCMV6-ENTRY MLH1 (Cat# RC201607, Right lane) cDNA for 48 hrs and lysed. Equivalent amounts of cell lysates (5 ug per lane) were separated by SDS-PAGE and immunoblotted with anti-MLH1 (Cat# [TA810261])(1:2000). Positive lysates [LY400096] (100ug) and [LC400096] (20ug) can be purchased separately from OriGene.



Western blot validation of overexpression lysate (Cat# [LY400096]) using anti-DDK antibody (Cat# [TA50011-100]). Left: Cell lysates from untransfected HEK293T cells; Right: Cell lysates from HEK293T cells transfected with RC201607 using transfection reagent MegaTran 2.0 (Cat# [TT210002]).



Coomassie blue staining of purified MLH1 protein (Cat# [TP301607]). The protein was produced from HEK293T cells transfected with MLH1 cDNA clone (Cat# RC201607) using MegaTran 2.0 (Cat# [TT210002]).



Western blot validation of overexpression lysate (Cat# [LY400096]) using an anti-DDK antibody (Cat# [TA50011-100]). Left: Cell lysates from untransfected HEK293T cells; Right: Cell lysates from HEK293T cells transfected with RC201607 using transfection reagent PEI