

## Product datasheet for **RC210880**

### **PMS2 (NM\_000535) Human Tagged ORF Clone**

#### **Product data:**

|                           |   |
|---------------------------|---|
| Product Type:             | Expression Plasmids                     |
| Product Name:             | PMS2 (NM_000535) Human Tagged ORF Clone |
| Tag:                      | Myc-DDK                                 |
| Symbol:                   | PMS2                                    |
| Synonyms:                 | HNPCC4; MLH4; MMRCS4; PMS2CL; PMSL2     |
| Mammalian Cell Selection: | Neomycin                                |
| Vector:                   | pCMV6-Entry (PS100001)                  |
| E. coli Selection:        | Kanamycin (25 ug/mL)                    |



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ORF Nucleotide  
Sequence:

>RC210880 ORF sequence  
 Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGAATTCGTGACTGGATCCGGTACCGAGGAGATCTGCC  
 GCCCGCATCGCC

ATGGAGCGAGCTGAGAGCTCGAGTACAGAACCTGCTAAGGCCATCAAACCTATTGATCGGAAGTCAGTCC  
 ATCAGATTTGCTCTGGCAGGTGGTACTGAGTCTAAGCACTGCGGTAAAGGAGTTAGTAGAAAACAGTCT  
 GGATGCTGGTGCCACTAATATTGATCTAAAGCTTAAGGACTATGGAGTGGATCTTATTGAAGTTTCAGAC  
 AATGGATGTGGGGTAGAAGAAGAAAACCTCGAAGGCTTAAGTCTGAAACATCACACATCTAAGATTCAAG  
 AGTTTGCCGACCTAACTCAGGTTGAACTTTTGGCTTTTGGGGGGAAGCTCTGAGCTCACTTTGTGCACT  
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 GGGAAAATATCCAGAAAACCCCTACCCCGCCAGAGGGACCACAGTCAAGTGTGAGGATTTT  
 CCACACTACCTGTGCCATAAGGAATTTCAAAGGAATTAAGAAGGAGTATGCCAAAATGGTCCAGGT  
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 AGCAGTTGCAAAGCCTCATTCTTTTGTTCAGCTGCCCCCTAGTACTCCGTGTGTGAAGAGTACGGTTT  
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 GGAAGGAGTTCAACAGACAGACAGTTTTTCTTTATCAACCGCGCGCTTGTGACCCAGCAAAGGTTGCA  
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 TGATTCAGAATGCGTTGATATCAATGTTACTCCAGATAAAAGGCAAAATTTGCTACAAGAGGAAAAGCTT  
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 ACTGCAGCAGCGAGTATGCGGCCAGTCCCGGGGACAGGGGCTCGCAGGAACATGTGGACTCTCAGGA  
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 CCAACTAGTAAAACTGGACCTTCGGACCCAGGACGTCGATGAACTGATCTTCATGCTGAGCGACAGCC  
 CTGGGGTTCATGTGCCGGCCTTCCGAGTCAAGCAGATGTTTGCCTCCAGAGCCTGCCGGAAGTCCGTGAT  
 GATTGGGACTGCTCTAACACAAGCGAGATGAAGAAAATGATCACCCACATGGGGGAGATGGACCACCC  
 TGGAACTGTCCCATGGAAGGCCAACCATGAGACACATCGCCAACTGGGTGTCATTTCTCAGAAC

ACCGGTACGCGGCCGCTCGAGCAGAACTCATCTCAGAAGAGGATCTGGCAGCAATGATATCCTGGATT  
 ACAAGGATGACGACGATAAGGTTTAA

Protein Sequence: >RC210880 protein sequence  
 Red=Cloning site Green=Tags(s)

MERAESSSTEPAKAIKPIDRKSVHQICSGQVVLSTAVKELVENSLDAGATNIDLKLDYGVLDLIEVSD  
 NGCGVEEENFEGLTLLKHTSKIQEFADLTQVETFGFRGEALSSLCALSDVTISTCHASAKVGTRLMFDHN  
 GKIIQKTPYPRRGTTVSVQQLFSTLPVRHKEFQRNIKEYAKMVQVLHAYCIIISAGIRVSCTNQLGQGK  
 RQPVVCTGGSPSIKENIGSVFGQKQLQSLIPFVQLPPSDSVCEEYGLSCSDALHNLFYISGFISQCTHGV  
 GRSSDRQFFFINRRPCDPAKVCRLVNEVYHMYNRHQYFVVLNISVDSECDVINVTPDKRQILLQEEKL  
 LLAVLKTSLIGMFDSDVNKLNVSQQPLLDVEGNLIKMHAAADLEKPMVEKQDQSPSLRTGEEKDVSISRL  
 REAFSLRHTTENKPHSPKTPEPRRSPLGQKRGMLSSSTSGAISDKGVLRPQKEAVSSSHGSPDPTDRAEV  
 EKDSGHGSTVDSEGFSPDPTGSHCSSEYAASSPGDRGSQEHVDSQEKAPETDDSFSDVDCHSNQEDTGC  
 KFRVLPQPTNLATPNTKRFKKEEILSSSDICQKLVNTQDMSASQVDVAVKINKKVPLDFSISSLAKRIK  
 QLHHEAQSEGEQNYRKFRAKICPGENQAAEDELRKEISKTMFAEMEIGQFNLGFIITKLNEDIFVDQ  
 HATDEKYNFEMLQQHTVLQGRQLIAPQTLNLTAVNEAVLIENLEIFRKNGFDFVIDENAPVTERAKLISL  
 PTSKNWTFGPQDVELIFMLSDSPGVMCRPSRVKQMFASRACRKSVMIGTALNTSEMKKLI THMGEMDHP  
 WNCPHGRPTMRHIANLGVISQN

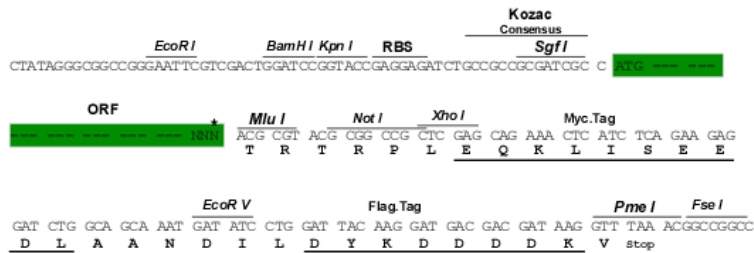
TRTRPLEQKLISEEDLAANDILDYKDDDDKV

Chromatograms: [https://cdn.origene.com/chromatograms/mk6692\\_d12.zip](https://cdn.origene.com/chromatograms/mk6692_d12.zip)

Restriction Sites: SgfI-MluI

Cloning Scheme:

Cloning sites used for ORF Shuttling:



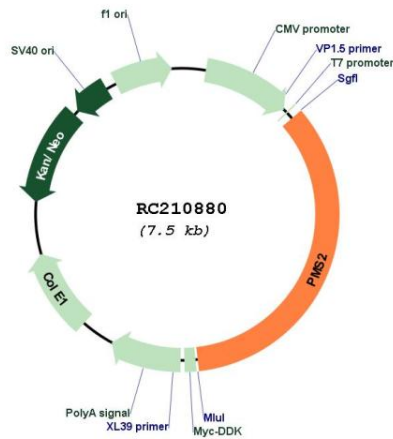
\* The last codon before the Stop codon of the ORF

|                               |  |
|-------------------------------|--|
| <b>ACCN:</b>                  | NM_000535  |
| <b>ORF Size:</b>              | 2586 bp  |
| <b>OTI Disclaimer:</b>        | <p>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 <a href="mailto:custsupport@origene.com">custsupport@origene.com</a> or by calling 301.340.3188 option 3 for pricing and delivery.</p> <p>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></p> |
| <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_000535.7</a>  |
| <b>RefSeq Size:</b>           | 2851 bp  |
| <b>RefSeq ORF:</b>            | 2589 bp  |
| <b>Locus ID:</b>              | 5395   |
| <b>UniProt ID:</b>            | <a href="#">P54278</a>   |
| <b>Cytogenetics:</b>          | 7p22.1   |
| <b>Domains:</b>               | DNA_mis_repair, HATPase_c  |
| <b>Protein Families:</b>      | Druggable Genome   |
| <b>Protein Pathways:</b>      | Mismatch repair  |
| <b>MW:</b>                    | 95.8 kDa   |

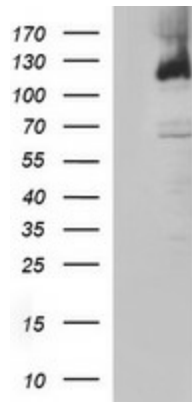
**Gene Summary:**

The protein encoded by this gene is a key component of the mismatch repair system that functions to correct DNA mismatches and small insertions and deletions that can occur during DNA replication and homologous recombination. This protein forms heterodimers with the gene product of the mutL homolog 1 (MLH1) gene to form the MutL-alpha heterodimer. The MutL-alpha heterodimer possesses an endonucleolytic activity that is activated following recognition of mismatches and insertion/deletion loops by the MutS-alpha and MutS-beta heterodimers, and is necessary for removal of the mismatched DNA. There is a DQHA(X)2E(X)4E motif found at the C-terminus of the protein encoded by this gene that forms part of the active site of the nuclease. Mutations in this gene have been associated with hereditary nonpolyposis colorectal cancer (HNPCC; also known as Lynch syndrome) and Turcot syndrome. [provided by RefSeq, Apr 2016]

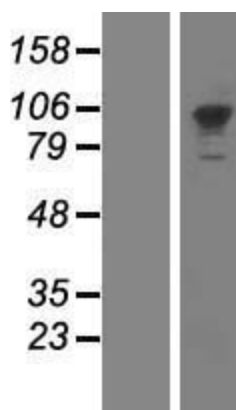
**Product images:**



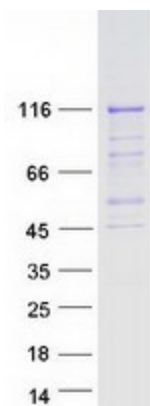
Circular map for RC210880



HEK293T cells were transfected with the pCMV6-ENTRY control (Cat# [PS100001], Left lane) or pCMV6-ENTRY PMS2 (Cat# RC210880, 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-PMS2 (Cat# [TA506658]). Positive lysates [LY424658] (100ug) and [LC424658] (20ug) can be purchased separately from OriGene.



Western blot validation of overexpression lysate (Cat# [LY424658]) using anti-DDK antibody (Cat# [TA50011-100]). Left: Cell lysates from untransfected HEK293T cells; Right: Cell lysates from HEK293T cells transfected with RC210880 using transfection reagent MegaTran 2.0 (Cat# [TT210002]).



Coomassie blue staining of purified PMS2 protein (Cat# [TP310880]). The protein was produced from HEK293T cells transfected with PMS2 cDNA clone (Cat# RC210880) using MegaTran 2.0 (Cat# [TT210002]).