

## Product datasheet for **MR218547**

### Top1 (NM\_009408) Mouse Tagged ORF Clone

#### Product data:

Product Type:	Expression Plasmids
Product Name:	Top1 (NM_009408) Mouse Tagged ORF Clone
Tag:	Myc-DDK
Symbol:	Top1
Synonyms:	A1467334; D130064I21Rik; Top-1
Mammalian Cell Selection:	Neomycin
Vector:	pCMV6-Entry (PS100001)
E. coli Selection:	Kanamycin (25 ug/mL)



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**ORF Nucleotide Sequence:**

>MR218547 representing NM\_009408, codon optimized.  
 Due to the complexity of NM\_009408, the ORF clone is codon optimized for mammalian Expression.  
 The nucleotide sequence differs from the reference sequence, yet the amino acid sequence remains identical.

Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC  
 GCC**CGATCGCC**

ATGTCAGGTGACCATCTGCATAATGATCCAGATCGAAGCTGATTTAGACTGAATGACAGTCATAAAC  
 ACAAAGACAAGCATAAGGATAGAGAACATCGGCACAAGGAGCACAAGAAAGATAAGGATAAAGACAGAGA  
 AAAATCCAAGCACTCCAATTCGAGCATAAAGGATAGTGAAGAAACACAAGGAGAAAGAAAAACAAA  
 CATAAAGATGGTAGCAGTGAGAAACACAAGGACAAGCACAAGGATCGGGATAAAGAGCGCAGAAAAGAGG  
 AAAAGATTAGGGCGGCCGGTACGCGAAGATTAAGAAAGAGAAAGAGAATGGCTTTCTCTCCACCACG  
 CATCAAGGACGAGCCGAAGATGATGGGTACTTTGCTCCGCCAAGGAGGATTAAGCCTCTGAAACGG  
 CTCAGGGACGAGGATGACGCCGACTATAAACCAAAAAAAAAAAGACCGAAGACATAAAGAAAGAGAAGA  
 AGAGAAAAAGTGAGGAAGAAGAGGATGGAAGCTCAAAAAGCCAAAAACAAGGATAAGGATAAAAAGGT  
 AGCAGAGCCTGATAACAAGAAGAAGAAGCCAAAAAAGAGAGGAACAAAAGTGGAAATGGTGGGAAGAG  
 GAACGCTATCCGAAGGCATAAAGTGGAAGTTCTGGAACATAAGGGTCTGTGTCGCTCCTCCTTACG  
 AACCACTGCCTGAAAGCGTCAAATTTACTACGACGGGAAGGTCATGAACTCTCCCTAAAGCGGAGGA  
 GGTAGCTACTTTTTCGCAAAGATGCTCGACCATGAGTACACAACATAAGGAGATCTCCGGAAAACTTT  
 TTCAAAGATTGGAGAAAGGAGATGACTAATGACGAGAAGAATACCATCACAAATCTGTCTAAGTGGGACT  
 TTACCAAAATGTCTCAGTATTTAAGGCACAGTCTGAGGCTAGGAAGCAGATGAGTAAGGAGAAAAAGCT  
 CAAGATCAAGGAGGAAAAAGAGAAGCTGCTGAAGGAGTATGGATTTGTGTGTCATGGACAATCACCGGAA  
 CGCATCGCAACTTCAAGATCGAACCTCTGGACTGTTTCGGGGCGCGGAATCATCAAAAATGGGTA  
 TGCTGAAGCGCCGAATCATGCCAGAGGATATCATCAACTGCAGTAAAGATGCCAAGGTTCCAGCCC  
 TCCGCCCGGCACAAATGGAAGGAAGTGCAGCAGATAACAAGGTGACGTGGCTCGTCTGAGCTGGACAGAA  
 AACATCCAGGGCTCAATCAAATATATTGCTGAATCCTTCTCCGAATCAAAGGAGAGAAGGACTGGC  
 AGAAGTACGAAACCGCACGCCCTTAAAAAGTGTGTCGACAAGATTCGCAATCAGTATAGAGAAGATTG  
 GAAATCCAAGAAATGAAGGTCCGCCAAAGGGCTGTGGCTTTGTACTTCATAGACAAGCTGGCTTTGCGA  
 GCCGGAAACGAGAAGGAAGAAGGCGAGACCCGACACTGTGGGGTGTGCTCTCTGCGGGTTGAGCATA  
 TCAATCTGCATCCAGAGCTCGATGGGCAAGAGTACGTGGTTCGAGTTTGATTTCCCGGGAAGGATAGCAT  
 TCGATACTACAACAAGGTGCCTGTGAAAAACGGGTGTTCAAGAACTTTCAGCTGTTTCATGGAGAAATAA  
 CAGCCAGAGGATGATCTTTGACAGACTGAACACTGGGATCCTGAACAAGCACCTGCAGGACTTGATGG  
 AAGGGCTCACAGCTAAGGTCTTTGCGACTTACAACGCCAGTATTACCCTGCAGCAGCAGCTTAAGGAGCT  
 GACAGCCCCAGATGAAAATGTCCAGCAAAGATCCTTTCATACAACCGCGCAAACAGGGCAGTAGCCATC  
 CTGTGTAATCATCAACGGGCCCCACCAAAACGTTTAAAAAGAGCATGATGAATTTGCAGTCTAAAATAG  
 ATGCCAAGAAGGACCAGCTGGCAGACGCCAGGCGAGATCTTAAGAGCGCTAAGGCTGACGCCAAAGTGAT  
 GAAAGACGCTAAGACAAAAAGGTGGTGAATCCAAGAAGAAGGCAAGTACAGAGGCTGGAAGAACAGCTG  
 ATGAAGCTCGAGGTGCAAGCCACCGATCGCAGGAGAAACAAGCAGATAGCCCTGGGGACTAGTAAGCTGA  
 ATTACCTTGACCCAAGGATCACCGTGGCTTGGTCAAAAAATGGGGCTGCCCATCGAGAAAAATCTATAA  
 CAAAACACTAGCGGGGAGAAATTCGCATGGGCTATCGACATGACCGATGAAGACTACGAATTT

**ACGCGT**ACGCGGCCGCTCGAGCAGAACTCATCTCAGAAGAGGATCTGGCAGCAATGATATCTGGATT  
 ACAAGGATGACGACGATAAGGTTTAA

Protein Sequence: >MR218547 representing NM\_009408  
 Red=Cloning site Green=Tags(s)

MSGDHLHNSQIEADFRLNDSHKHKDKHKDREHRHKEHKKDKDKDREKSKHSNSEHKDSEKKHKEKEKTK  
 HKDGSSEKHKDKHKDRDKERRKEEKIRAAGDAKIKKEKENGFSPPRIKDEPEDDGYFAPPKEDIKPLKR  
 LRDEDDADYKPKKIKTEDIKKEKKRKSEEEEDGKLKPKKNKDKKVAEPDNKKKPKKEEQKWKWWE  
 ERYPEGIKWKFLHKGPFVAPPYEPLPESVKFYFDGKVMKLSPKAEEVATFFAKMLDHEYTTKEIFRKNF  
 FKDWRKEMTNDKENTITNL SKCDF TQMSQYFKAQSEARKQMSKEEKLKIKEENEKLLKEYGFCVMDNHRE  
 RIANFKIEPPGLFRGRGNHPKMGLKRRIMPEDI I INCSKDAKVPSPPGHKWKEVRHDNKVTLVSWTE  
 NIQGSIKYIMLNPSSRIKGEKDWQKYETARRLKKCVDKIRNQYREDWKSSEMVKVRQAVALYFIDKLALR  
 AGNEKEEGETADTVGCCSLRVEHINLHPELDGQEYVVEFD FPGKDSIRYYNKVPVEKRVFKNLQLFMENK  
 QPEDDLFDRLNTGILNKHLQDLMEGLTAKVFRTYNASITLQQQLKELTAPDENVPAKILSYNRRANRAVAI  
 LCNHQRAPPKTFEKSMMNLQSKIDAKKQLADARRDLKSAKADAKVMKDAKTKKVVESKKKAVQRLEEQL  
 MKLEVQATDREENKQIALGTSKLNYLDPRITVAWCKKWGVPIEKIYNKTQREKFAWAIDMTDEDYEF

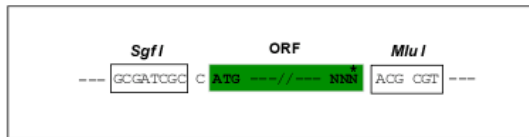
TRTRPLEQKLISEEDLAANDILDYKDDDDKV

Restriction Sites:

Sgfl-MluI

Cloning Scheme:

Cloning sites used for ORF Shuttling:

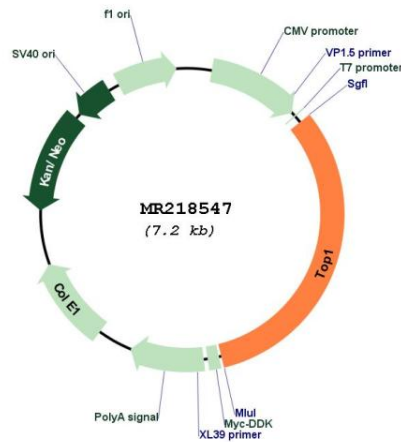


\* The last codon before the Stop codon of the ORF

<b>ACCN:</b>	NM_009408
<b>ORF Size:</b>	2301 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>	<u><a href="#">NM_009408.2</a></u> , <u><a href="#">NP_033434.2</a></u>
<b>RefSeq Size:</b>	3859 bp
<b>RefSeq ORF:</b>	2304 bp
<b>Locus ID:</b>	21969
<b>UniProt ID:</b>	<u><a href="#">Q04750</a></u>
<b>Cytogenetics:</b>	2 80.96 cM
<b>MW:</b>	90.9 kDa

**Gene Summary:**

Releases the supercoiling and torsional tension of DNA introduced during the DNA replication and transcription by transiently cleaving and rejoining one strand of the DNA duplex. Introduces a single-strand break via transesterification at a target site in duplex DNA. The scissile phosphodiester is attacked by the catalytic tyrosine of the enzyme, resulting in the formation of a DNA-(3'-phosphotyrosyl)-enzyme intermediate and the expulsion of a 5'-OH DNA strand. The free DNA strand then rotates around the intact phosphodiester bond on the opposing strand, thus removing DNA supercoils. Finally, in the religation step, the DNA 5'-OH attacks the covalent intermediate to expel the active-site tyrosine and restore the DNA phosphodiester backbone. Regulates the alternative splicing of tissue factor (F3) pre-mRNA in endothelial cells. Involved in the circadian transcription of the core circadian clock component ARNTL/BMAL1 by altering the chromatin structure around the ROR response elements (ROREs) on the ARNTL/BMAL1 promoter.[UniProtKB/Swiss-Prot Function]

**Product images:**

Circular map for MR218547