

## Product datasheet for MR229855

### Tmem173 (NM\_001289591) Mouse Tagged ORF Clone

#### Product data:

**Product Type:** Expression Plasmids  
**Product Name:** Tmem173 (NM\_001289591) Mouse Tagged ORF Clone  
**Tag:** Myc-DDK  
**Symbol:** Tmem173  
**Synonyms:** 2610307O08Rik; ERIS; Mita; MPYS; STING  
**Vector:** pCMV6-Entry (PS100001)  
**E. coli Selection:** Kanamycin (25 ug/mL)  
**Cell Selection:** Neomycin  
**ORF Nucleotide Sequence:** >MR229855 representing NM\_001289591  
Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGCCGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC  
GCC**CGGATCGCC**

ATGATAGTAGAGAGCTTTGGGGCCTCTGGAATCCTGTGGGGCCTGTCACCTTTTGGTCCTTGTATGGAG  
TCCTGCTAGGTGCCACTGGAGTGTGTTACATCTCGGGACCTTTAGAGGAATTCGGAGTGGGGGCTGTG  
GCTGCTGATGCCATACTCCAACCTGCATCCAGCCATCCCACGGCCAGAGGTCACCGCTCCAATATGTA  
GCCCTCATCTTTCTGGTGCCAGCCTGATGATCCTTTGGGTGGCAAAGGATCCACCAAATCACACTCTGA  
AGTACCTAGCACTTCACCTAGCCTCGCACGAACCTGGACTACTGTTGAAAAACCTCTGCTGTCTGGCTGA  
AGAGCTGTGCCATGTCCAGTCCAGGTACCAGGGCAGCTACTGGAAGGCTGTGCGCGCCTGCCTGGGATGC  
CCCATCCACTGTATGGCTATGATTCTACTATCGTCTTATTTCTATTTCTCCAAAACACTGCTGACATAT  
ACCTCAGTTGGATGTTTGGCCTTCTGGTCTCTATAAGTCCCTAAGCATGCTCCTGGGCCTTCAGAGCTT  
GACTCCAGCGGAAGTCTCTGCAGTCTGTGAAGAAAAGAAGTTAAATGTTGCCACGGGCTGGCCTGGTCA  
TACTACATTGGTACTTGCAGTGTACCAGGGCTCCAGGCCGGATCCGAATGTTCAATCAGCTAC  
ATAACAACATGCTCAGTGGTGCAGGGAGCCGAAGACTGTACATCCTCTTTCCATTGGACTGTGGGGTCC  
TGACAACCTGAGTGTAGTTGACCCCAACATTCGATTCCGAGATATGCTGCCCCAGCAAACATCGACCGT  
GCTGGCATCAAGAATCGGGTTTATTCCAACAGCGTCTACGAGATTCTGGAGAACGGACAGCCAGCAGGCG  
TCTGTATCCTGGAGTACGCCACCCCTTGCAGACCCTGTTTGCCATGTCACAGGATGCCAAAGCTGGCTT  
CAGTCGGGAGGATCGGCTTGAGCAGGCTAAACTCTTCTGCCGGACACTTGAGGAAATCCTGGAAGATGTC  
CCCAGTCTCGAAATAACTGCCGCCTATTGTCTACCAAGAACCACAGACGGAAACAGTTTCTCACTGT  
CTCAGGAGGTGCTCCGGCACATTCGTGAGGAAGAAAAGGAGGAGTTACCATGAATGCCCCATGACCTC  
AGTGGCACCTCCTCCCTCCGACTGTCCAAGAGCCAAGACTCCTCATCAGTGGTATGGATCAGCCTCTC  
CCACTCCGCACTGACCTCATC

**ACGCGT**ACGCGGGCCGCTCGAGCAGAAACTCATCTCAGAAGAGGATCTGGCAGCAAATGATATCCTGGATT  
ACAAGGATGACGACGATAAGGTTTAA



Protein Sequence: >MR229855 representing NM\_001289591  
 Red=Cloning site Green=Tags(s)

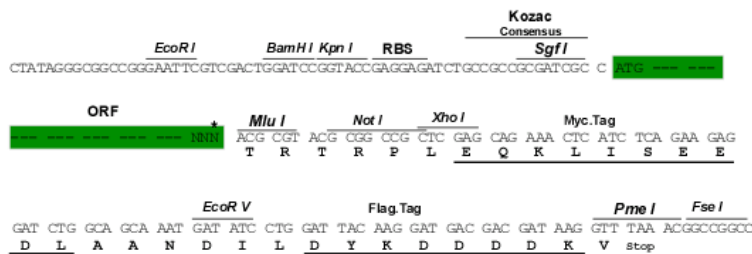
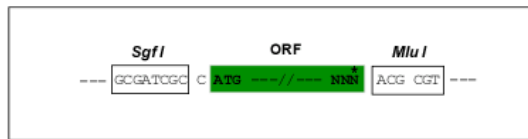
MIVESFGASGNPVGPFHWSLYGVLLGVHWSVLHLGTFRGIRSAWLMLPYSNLHPAIPRPRGHRSKYV  
 ALIFLVAFLMILWVAKDPPNHTLKYLAHLASHELGLLLKNLCCLAEELCHVQSRYSYQGSYWKAVRACLGC  
 PIHCMAMILLSSYFYFLQNTADIYLSWMFGLLVLYKSLMMLGLQSLTPAEVSACEEKKLNVAHGLAWS  
 YYIGYLRILPGLQARIRMFNQLHNMLSGAGSRRLYILFPLDCGVDPNLSVVDPNIRFRDMLPQQNIDR  
 AGIKNRVYSNSVYEILENGQPAGVCILEYATPLQTLFAMSQDAKAGFSREDRLEQAKLFCRTLEEILEDV  
 PESRNNCRLLIVYQEPDGNFSLSQEVLRHIRQEKEEVTMNAPMTSVAPPPSVLSQEPRLLSGMDQPL  
 PLRTDLI

TRTRPLEQKLISEEDLAANDILDYKDDDDKV

Restriction Sites: SgfI-MluI

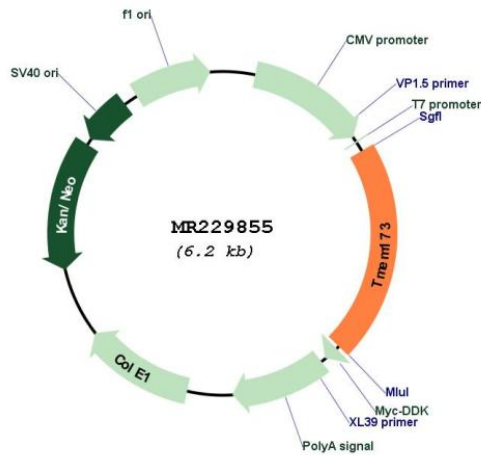
Cloning Scheme:

Cloning sites used for ORF Shuttling:



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

Plasmid Map:



ACCN: NM\_001289591

<b>ORF Size:</b>	1281 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_001289591.1</a> , <a href="#">NP_001276520.1</a>
<b>RefSeq Size:</b>	2212 bp
<b>RefSeq ORF:</b>	1284 bp
<b>Locus ID:</b>	72512
<b>UniProt ID:</b>	<a href="#">Q3TBT3</a>
<b>Cytogenetics:</b>	18
<b>MW:</b>	48.6 kDa

**Gene Summary:**

Facilitator of innate immune signaling that acts as a sensor of cytosolic DNA from bacteria and viruses and promotes the production of type I interferon (IFN-alpha and IFN-beta) (PubMed:18818105, PubMed:19433799, PubMed:19776740, PubMed:26229117, PubMed:26669264). Innate immune response is triggered in response to non-CpG double-stranded DNA from viruses and bacteria delivered to the cytoplasm (PubMed:18818105, PubMed:19433799, PubMed:19776740, PubMed:26229117, PubMed:26669264). Acts by binding cyclic dinucleotides: recognizes and binds cyclic di-GMP (c-di-GMP), a second messenger produced by bacteria, and cyclic GMP-AMP (cGAMP), a messenger produced by CGAS in response to DNA virus in the cytosol (PubMed:21947006, PubMed:23722158, PubMed:23258412, PubMed:23519410, PubMed:23910378). Upon binding of c-di-GMP or cGAMP, TMEM173/STING oligomerizes, translocates from the endoplasmic reticulum and is phosphorylated by TBK1 on the pLxIS motif, leading to recruitment and subsequent activation of the transcription factor IRF3 to induce expression of type I interferon and exert a potent anti-viral state (PubMed:25636800). In addition to promote the production of type I interferons, plays a direct role in autophagy (PubMed:30568238). Following cGAMP-binding, TMEM173/STING buds from the endoplasmic reticulum into COPII vesicles, which then form the endoplasmic reticulum-Golgi intermediate compartment (ERGIC) (By similarity). The ERGIC serves as the membrane source for WIPI2 recruitment and LC3 lipidation, leading to formation of autophagosomes that target cytosolic DNA or DNA viruses for degradation by the lysosome (By similarity). The autophagy- and interferon-inducing activities can be uncoupled and autophagy induction is independent of TBK1 phosphorylation (By similarity). Autophagy is also triggered upon infection by bacteria: following c-di-GMP-binding, which is produced by live Gram-positive bacteria, promotes reticulophagy (PubMed:29056340). Exhibits 2',3' phosphodiester linkage-specific ligand recognition: can bind both 2'-3' linked cGAMP (2'-3'-cGAMP) and 3'-3' linked cGAMP but is preferentially activated by 2'-3' linked cGAMP (PubMed:26300263). The preference for 2'-3'-cGAMP, compared to other linkage isomers is probably due to the ligand itself, which adopts an organized free-ligand conformation that resembles the TMEM173/STING-bound conformation and pays low energy costs in changing into the active conformation (By similarity). May be involved in translocon function, the translocon possibly being able to influence the induction of type I interferons (By similarity). May be involved in transduction of apoptotic signals via its association with the major histocompatibility complex class II (MHC-II) (PubMed:18559423).[UniProtKB/Swiss-Prot Function]