

## Product datasheet for **RN207589**

### **Tmem173 (NM\_001109122) Rat Untagged Clone**

#### Product data:

Product Type:	Expression Plasmids
Product Name:	Tmem173 (NM_001109122) Rat Untagged Clone
Tag:	Tag Free
Symbol:	Tmem173
Synonyms:	RGD1562552; rSTING
Mammalian Cell Selection:	Neomycin
Vector:	pCMV6-Entry (PS100001)
E. coli Selection:	Kanamycin (25 ug/mL)
Fully Sequenced ORF:	>RN207589 representing NM_001109122 Red=Cloning site Blue=ORF Orange=Stop codon

TTTTGTAATACGACTCACTATAGGGCGGCCGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC  
GCC**CGATCGCC**

ATGCCATACTCCAACCTGCATCCATCCATCCCACGGCCAGAAAGTTACCGCTTCAAACCTGGCAGCCTTCG  
TCTTGCTGGTGGCAGCCTGATGAGCCTTTGGATGACAGGGGAACCACCAAGTCACACTCTGCATTACCT  
AGCACTTACGTAGCCTCGCAGCAACTGGATTACTGTTGAAAAAGCTCTGCTGTCTGGTGAAGAGTTG  
TGCCATGTCCAGTCCAGTACCAGGGCAGCTACTGGAAGGCTGTGCGCCTGCGTGGGAGTCCCATCT  
GCTTTATGGCCCTGATCCTACTGTCATTTTATTCTACTGCTCCCTCGAAAATACTTCTGACCTGCGCT  
TGCTTGGCATCTTGGCATCCTGGTCCTTCAAAGTCCCTAAGCATGACCCCTGGACCTTCAAGCTTGGCC  
CCAGCAGAAGTCTCTGCGGTCTGTGAAGAAAAGAACTTCAATGTTGCCATGGACTGGCCTGGTCTGACT  
ACATTGGGTACCTGAAGCTGATCTTGCCAGGACTGCAGGCCCGGATCCGGATGTTCAATCAGCTACACAA  
CAACATGCTCTCGGGTGCGGGAGCCGGCGGTGTATATCCTCTTCCATTGGACTGTGGGTGCCTGAT  
GATCTGAGTGTGGCTGACCCCAATTCGATTCCGAGATATGCTGCCAGCAAAACACAGACCGTGTCTG  
GCGTCAAGAATCGGGCTTATTCCAACAGTGTCTATGAACTTCTGGAGAATGGGCAGCCGGCAGGTGCCTG  
TATCCTGGAGTACGCCACCCCTTGACAGCCTTGTGGCATGTACAGGATGGCAAAGCTGGCTGATGCCCTG  
CGGGAGGACCGGCTTGAGCAGGCCAAACTCTTCTGTCGGACACTTGAGGAAATTCGGCTGATGCCCTG  
AGTCTCGAAACCACTGCCGCTCATTGTCTACCAAGAATCCGAAGAGGAAACAGTTTCTCGCTGTCTCA  
GGAGGTGCTCCGGCACATTCGGCAAGAAGAAAAGGAGGAAGTTACCATGAGTGGCCCCCGACCTCAGTG  
GCACCTCGTCCCTCCCTACTGTCCCAAGAGCCGAGACTTCTCATCAGTGGCATGGAGCAGCCTCTCCAC  
TCCGCACGGACCTCATC**TGA**

**ACGCGT**ACGCGGCCGCTCGAGCAGAAACTCATCTCAGAAGAGGATCTGGCAGCAAATGATATCCTGGATT  
ACAAGGATGACGACGATAAGGTTTAA



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Chromatograms:	<a href="https://cdn.origene.com/chromatograms/ja3700_b03.zip">https://cdn.origene.com/chromatograms/ja3700_b03.zip</a>
Restriction Sites:	Sgfl-Mlul
ACCN:	NM_001109122
Insert Size:	1140 bp
OTI Disclaimer:	<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>Our molecular clone sequence data has been matched to the reference identifier above as a point of reference. Note that the complete sequence of our molecular clones may differ from the sequence published for this corresponding reference, e.g., by representing an alternative RNA splicing form or single nucleotide polymorphism (SNP).</p>
Components:	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).
Reconstitution Method:	<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>
RefSeq:	<a href="#">NM_001109122.1</a> , <a href="#">NP_001102592.1</a>
RefSeq Size:	2040 bp
RefSeq ORF:	1140 bp
Locus ID:	498840
UniProt ID:	<a href="#">F1M391</a>
Cytogenetics:	18p11

**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:26669264). Innate immune response is triggered in response to non-CpG double-stranded DNA from viruses and bacteria delivered to the cytoplasm (By similarity). 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 (By similarity). 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:26669264). In addition to promote the production of type I interferons, plays a direct role in autophagy (By similarity). 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 (By similarity). 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:26669264). 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) (By similarity).[UniProtKB/Swiss-Prot Function]