

Product datasheet for MR227544

Tmem173 (NM_028261) Mouse Tagged ORF Clone

Product data:

Product Type: Expression Plasmids
Product Name: Tmem173 (NM_028261) Mouse Tagged ORF Clone
Tag: Myc-DDK
Symbol: Tmem173
Synonyms: 2610307O08Rik; ERIS; Mita; MPYS; STING
Mammalian Cell Selection: Neomycin
Vector: pCMV6-Entry (PS100001)
E. coli Selection: Kanamycin (25 ug/mL)
ORF Nucleotide Sequence: >MR227544 representing NM_028261
 Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC
 GCC**CGATCGCC**

ATGCCATACTCCAACCTGCATCCAGCCATCCCACGGCCCAGAGGTCACCGCTCCAAATATGTAGCCCTCA
 TCTTTCTGGTGGCCAGCCTGATGATCCTTTGGGTGGCAAAGGATCCACCAAATCACACTCTGAAGTACCT
 AGCACTTACCTAGCCTCGCACGAACCTGGACTACTGTTGAAAACTCTGCTGTCTGGTGAAGAGCTG
 TGCCATGTCCAGTCCAGGTACCAGGCGACTACTGGAAGGCTGTGCGCGCTGCCTGGGATGCCCATCC
 ACTGTATGGCTATGATTCTACTATCGTCTTATTTCTATTTCTCCAAAACACTGCTGACATATACCTCAG
 TTGGATGTTTGGCCTTCTGGTCTCTATAAGTCCCTAAGCATGCTCTGGGCTTCAGAGCTTGACTCCA
 GCGGAAGTCTCTGCAGTCTGTGAAGAAAAGAAATTAATGTTGCCACGGGCTGGCTGGTCATACTACA
 TTGGGTACTTGGCGTTGATCTTACCAGGGCTCCAGGCCGGATCCGAATGTTCAATCAGTACATAACAA
 CATGCTCAGTGGTGCAGGGAGCCGAAGACTGTACATCCTCTTCCATTGGACTGTGGGTTGCCTGACAAC
 CTGAGTGTAGTTGACCCCAACATTCGATTCCGAGATATGCTGCCCCAGCAAAACATCGACCGTGTGGCA
 TCAAGAATCGGGTTTATCCAACAGCGTCTACGAGATTCTGGAGAACGGACAGCCAGCAGGCGTCTGTAT
 CCTGGAGTACGCCACCCCTTGCAGACCCTGTTTGCCATGTCACAGGATGCCAAAGCTGGCTTCAGTCGG
 GAGGATCGGCTTGAGCAGGCTAAACTCTTCTGCCGGACACTTGAGGAAATCCTGGAAGATGTCCCGGAGT
 CTCGAAAATAACTGCCGCCTCATTGTCTACCAAGAACCACAGACGGAAACAGTTTCTCACTGTCTCAGGA
 GGTGCTCCGGCACATTCGTGAGGAAGAAAAGGAGGAGTTACCATGAATGCCCCATGACCTCAGTGGCA
 CCTCCTCCCTCCGTAAGTGTCCCAAGAGCCAAGACTCCTCATCAGTGGTATGGATCAGCCTCTCCACTCC
 GCACTGACCTCATC

ACGGTACGGGCGCTCGAGCAGAAACTCATCTCAGAAGAGGATCTGGCAGCAATGATATCCTGGATT
 ACAAGGATGACGACGATAAGGTTTAA



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Protein Sequence: >MR227544 representing NM_028261
Red=Cloning site Green=Tags(s)

MPYSNLHPAIPRPRGHRSKYVALIFLVASLMILWVAKDPPNHTLKYALHLASHELGLLLKNLCCLAEEL
 CHVQSRYPQGSYWKAVRACLGCP IHCMAMILLSSYFYFLQNTADIYLSWMFGLLVLYKSLMMLGLQSLTP
 AEVSAVCEEKLNVAHGLAWSYYIGYLRILPLGLQARIRMFNQLHNNMLSGAGSRRLYILFPLDCGVDPN
 LSVVDPNIRFRDMLPQQNIDRAGIKNRVYSNVYEILENGQPAGVCILEYATPLQTLFAMSQDAKAGFSR
 EDRLEQAKLFCRTL EEILEDVPE SRNNCR LIVYQEPTDGN SFSLSQEVL RHRIRQE EKEEVTM NAPMTSVA
 PPSVLSQEPRL LISGMDQPLPLRTDLI

TRTRPLEQKLISEEDLAANDILDYKDDDDKV

Chromatograms: https://cdn.origene.com/chromatograms/ja1698_a08.zip

Restriction Sites: SgfI-MluI

Cloning Scheme:



* The last codon before the Stop codon of the ORF

ACCN: NM_028261

ORF Size: 1134 bp

OTI Disclaimer: 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 custsupport@origene.com or by calling 301.340.3188 option 3 for pricing and delivery.

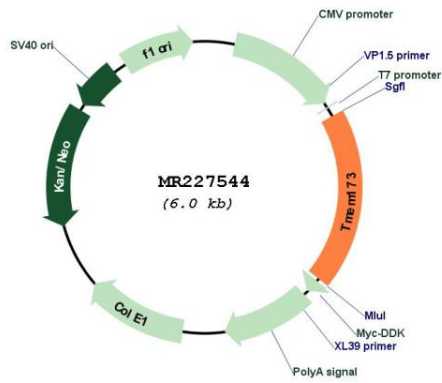
The molecular sequence of this clone aligns with the gene accession number as a point of reference only. However, individual transcript sequences of the same gene can differ through naturally occurring variations (e.g. polymorphisms), each with its own valid existence. This clone is substantially in 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.
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">1. Centrifuge at 5,000xg for 5min.2. Carefully open the tube and add 100ul of sterile water to dissolve the DNA.3. Close the tube and incubate for 10 minutes at room temperature.4. Briefly vortex the tube and then do a quick spin (less than 5000xg) to concentrate the liquid at the bottom.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.
Note:	Plasmids are not sterile. For experiments where strict sterility is required, filtration with 0.22um filter is required.
RefSeq:	NM_028261.1 , NP_082537.1
RefSeq Size:	2302 bp
RefSeq ORF:	1137 bp
Locus ID:	72512
UniProt ID:	Q3TBT3
Cytogenetics:	18
MW:	43.3 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]

Product images:



Circular map for MR227544