

## Product datasheet for **MC222360**

### Piwil4 (NM\_177905) Mouse Untagged Clone

#### Product data:

Product Type:	Expression Plasmids
Product Name:	Piwil4 (NM_177905) Mouse Untagged Clone
Tag:	Tag Free
Symbol:	Piwil4
Synonyms:	9230101H05Rik; Miwi2
Vector:	pCMV6-Entry (PS100001)
E. coli Selection:	Kanamycin (25 ug/mL)
Cell Selection:	Neomycin



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**Fully Sequenced ORF:** >MC222360 representing NM\_177905  
 Red=Cloning site Blue=ORF Orange=Stop codon

TTTTGTAATACGACTCACTATAGGGCGGCCGGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC  
 GCC**CGCATCGCC**

ATGCGCCTGCGCATTCTGGGGTCCACCGGCCCTGCCACCCACGCTCGGGTTGCTGTTTGTAGTAACT  
 ATCTTGGGAAGCTTGAATACTCCCAAACCTCGAGTCACAGCCACACCGTCTCTTTTGCCAAAGAGAAAAC  
 ACTCCTGTTGAGGCTCACCAGCCCTGGAAAGCCGCTGGCACCCAGGAACATGAGTGGACGGGCCCGTGTG  
 AGAGCGGAGGCATCACCAGTGGCCACAGTGTAGGGAAGTGGGGCGGTCTCAAGAGACCTCATGGTTA  
 CATCTGCCAGTCTGGGGACAGCGAGGCCGGAGGTGGGACAAGTGTATTTCACAGCCATATGAACTTGG  
 TGTCTCTTCTGGTGTGGTGGACGTACCTTCATGGAAAGAAGAGGCAAAGGCAGACAGGACTTCGAAGAG  
 TTGGGTGTCTGTACCAGGAAAAGTTGACCCACGTAAAAGATTGTAAAACAGTTCTAGCGGAATACCTG  
 TCGGGCTGTTACAAATCTCTTTAATTTAGATTTGCCCCAGGATTGGCAGCTGTACCAGTACCATGTCAC  
 GTACAGCCAGATTTAGCCTCTAGGAGGCTGAGGATTGCTTTGCTTTATAATCACAGCATACTCTCAGAC  
 AAGGCAAAAGCATTGACGGTGCCAGCCTTTTCTCTCAGAAAAGCTGGACCAGAAGGTCACAGAACTGA  
 CAAGTGAACACAAAGAGGTGAGACTATAAAGATAACGCTCACCCTAACGAGCAAGCTCTTCCCAAACCTC  
 CCCTGTGTGCAATTCAGTCTTCAATGTCATCTTCAGAAAGATCTTGAAAACTTGAGTATGTACCAAATT  
 GGACGGAACTTCTATAAGCCTTCAGAACCAGTGGAGATCCCTCAGTACAACAAGCTCCTATTCAATGCTG  
 ACGTGAATAACAAGTCTCCGCAATGAGACCGTCTGGACTTCATGACTGATCTCTGCCTCAGAAGTGG  
 CATGCTTGTCTCACCGAGATGTGCCACAAACAACTAGTGGGGCTCGTTGCCTTACCAGATAACAACAAC  
 AAAACATATCGTATCGATGACATTGACTGGTCTGTGAAGCCACACAGGCCTTTCAGAAGCGGGACGGCT  
 CAGAGGTCACATATGTGGATTACTACAAGCAGCAATATGATATCACCTTATCTGACCTAAATCAGCAGT  
 GCTTGTAGTCTGTTGAAAAGAAAAGAGAAATGATAACTCTGAGCCTCAGATGGTCCACCTGATGCCAGAG  
 CTCTGCTTTCTCACAGGCCTGAGCAGCCAAAGCAACCTCAGATTTCCGCCTGATGAAGGCAGTAGCTGAAG  
 AGACTCGGCTCAGTCTGTGGGAAGGCAGCAGCAGCTGGCCCGACTCGTGGATGACATCCAGAGAACCTT  
 ACCTTCTTCTCAAGAAGTCTCTCTCATACTTCTTGCCTTTGTGGGCCCCAGAGCCAGGAGGACTTAGC  
 AGTGTATACCACTGAGCACTGTGCTTCCCTTTGCCAGCAGCTGTTAACTGCCCTGAGCCTCTCCCGG  
 GAATCCCTCTGCCCCACCTCAAGCCTCCCTCCTTCTGTTCTTGTGTCAACCTGCATTTGCTGCTGACTG  
 GTCCAAAGATATGCGATCTTGAAGTTTTGAGTCTCAGCCTTGAATAGATGGTTGATCGTGTGCTGT  
 AACAGGGCTGAGCACTTGATTGAAGCCTTCTGAGCTGTCTGAGGAGAGTTGGAGTTCCATGGGATTTA  
 ACGTGGGCTACCCAAAATCATAAAAGTGGACGAGACCCAGCAGCGTTCCTTCGAGCCATCCAGGTGCA  
 CGGCGACCCCGATGTTCAAGTGGTGTGATGTGCATTTCTGCCTTCTAATCAGAAGAACTATTACGACTCCATT  
 AAAAGTATTTGAGCTCTGACTGCCAGTGCCAAGCCAGTGTGTGCTGACCCGGACCTTGAATAAGCAGG  
 GAACGATGCTGAGTGTGGCCACCAAGATCGCCATGCAGATGACCTGCAAACCTTGGCGGAGAGCTGTGGTC  
 TGTGGAGATCCCATGAAGTCCCTGATGGTCTGGGTATTGATATCTGCAGAGATGCCCTCAACAAGAAAT  
 GTGGTGGTCTGCGGGTTGTAGCCAGCATTAAATCCAGGATCACAGGTGGTTTTCCCGCTGTGCTCTC  
 AGAGAACAGCGGCTGATATTGCAGATTGCCTCAAAGTCTGCATGACTGGTGTCTCAACCGGTGGTACAG  
 ACACAACCATGACTTGGCGGACGAGATAGTGTGTACCGGACGGGTGAGGCAATGGCCAGCTAAAGGCA  
 GTTTTGGAATATGAAGTCCACAGCTACTGAAAAGTGTAAACAGAGTGGCGCTCGGATGCCAGGTATGACT  
 TCTACCTGATCAGCCAGACTGCTAACCGGGGACTGTTAGTCCCACCCACTACAACGTTATCTATGATGA  
 CAATGCCTTGAAGCCTGACCACATGCAGCGACTGACCTTCAAACCTGTGCCATCTCTACTACAACCTGGCAG  
 GGCTTAATCAGTGTCCCGCACCATGCCAATATGCACACAAGCTGACCTTCTGGTGGCACAAGTGTCC  
 ACAAGGAACCAAGTCTGGAATTAGCCAATAATCTTTTCTACCT**TGA**

**ACGCGT**ACGCGGCCGCTCGAGCAGAAAACCTCATCTCAGAAGAGGATCTGGCAGCAAATGATATCCTGGATT  
 ACAAGGATGACGACGATAAGGTTTAA

**Restriction Sites:** SgfI-MluI  
**ACCN:** NM\_177905

<b>Insert Size:</b>	2637 bp
<b>OTI Disclaimer:</b>	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).
<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_177905.3</a></u> , <u><a href="#">NP_808573.2</a></u>
<b>RefSeq Size:</b>	2637 bp
<b>RefSeq ORF:</b>	2637 bp
<b>Locus ID:</b>	330890
<b>UniProt ID:</b>	<u><a href="#">Q8CGT6</a></u>
<b>Cytogenetics:</b>	9 A2

**Gene Summary:**

Plays a central role during spermatogenesis by repressing transposable elements and preventing their mobilization, which is essential for the germline integrity (PubMed:17395546, PubMed:18381894, PubMed:18922463, PubMed:26669262, PubMed:22020280). Acts via the piRNA metabolic process, which mediates the repression of transposable elements during meiosis by forming complexes composed of piRNAs and Piwi proteins and governs the methylation and subsequent repression of transposons (PubMed:17395546, PubMed:18381894, PubMed:18922463, PubMed:26669262, PubMed:22020280). Directly binds piRNAs, a class of 24 to 30 nucleotide RNAs that are generated by a Dicer-independent mechanism and are primarily derived from transposons and other repeated sequence elements. Associates with secondary piRNAs antisense and PIWIL2/MILI is required for such association (PubMed:17395546, PubMed:18381894, PubMed:18922463, PubMed:26669262, PubMed:22020280). The piRNA process acts upstream of known mediators of DNA methylation (PubMed:17395546, PubMed:18381894, PubMed:18922463, PubMed:26669262, PubMed:22020280). Does not show endonuclease activity (PubMed:22020280). Plays a key role in the piRNA amplification loop, also named ping-pong amplification cycle, by acting as a 'slicer-incompetent' component that loads cleaved piRNAs from the 'slicer-competent' component PIWIL2 and target them on genomic transposon loci in the nucleus (PubMed:22020280). In addition to its role in germline, PIWIL4 also plays a role in the regulation of somatic cells activities. Plays a role in pancreatic beta cell function and insulin secretion (By similarity). Involved in maintaining cell morphology and functional integrity of retinal epithelial through Akt/GSK3alpha/beta signaling pathway (By similarity). [UniProtKB/Swiss-Prot Function]