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Product datasheet for MC222906

Piwil2 (NM_021308) Mouse Untagged Clone

Product data:

Product Type:	Expression Plasmids
Product Name:	Piwil2 (NM_021308) Mouse Untagged Clone
Tag:	Tag Free
Symbol:	Piwil2
Synonyms:	mili; Piwil1l
Vector:	pCMV6-Entry (PS100001)
E. coli Selection:	Kanamycin (25 ug/mL)
Cell Selection:	Neomycin

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Fully Sequenced ORF:

>MC222906 representing NM_021308
Red=Cloning site Blue=ORF Orange=Stop codon

TTTTGTAATACGACTCACTATAGGGCGGCCGGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC
GCCGCGATCGCC

ATGGATCCTGTCAGGCCGTTGTTCAGGGGGCCCACCCCAGTCCACCCATCTCAGTGTGTGCGGATGCCAG
GCTGTTGGCCTCAAGCTCCTAGACCTTTGGAACCAGCTTGGGGTAGGGCAGGACCTGCAGGCAGAGGCCT
TGTGTTTAGAAAACCAGAAGACTCCAGCCCACCACTCCAGCCAGTACAAAAGGATTCTGTAGGTTTGGTG
TCCATGTTCCGTGGCATGGGTCTTGACACAGCATTCCGGCCTCCTTCAAAACGAGAAGTGCCTCCTTTAG
GCAGAGGAGTTCTAGGTCGAGGCTTGTCTGCTAACATGGTCCGCAAGGACAGAGAAGAACCCCGTTCCTC
TTTGCCTGATCCTTCGGTGCTGGCAGCTGGGGACAGCAAACTGGCAGAGGCTTCTGTTGGTTGGAGTAGA
ATGCTGGGAAGAGGTAGTTCTGAGGTCTCTCTGTTACCACTGGGACGAGCAGCCAGTAGTATAGGCAGAG
GAATGGACAAACCTCCCAGTGCCTTTGGCCTCACAGCTCGGGATCCCCCACGGCTGCCACAGCCTCCAGC
TCTGTCTCCAACTTCACTGCACTCTGCCGATCCCCCTCCGGTCCTGACTATGGAACGAAAGGAAAAAGAG
CTTTTGGTCAAGCAAGGATCAAAAGGAACTCCTCAGTCTTTGGGACTGAACCTCATCAAAATCCAGTGTC
ATAACGAAGCAGTTTATCAGTACCATGTGACTTTCAGCCCCAGTGTGGAATGCAAAAGCATGAGGTTTGG
CATGTTGAAGGACCACCAGTCTGTCACTGGAAACGTCACTGCTTTTGATGGCTCTATTCTTTATCTTCCT
GTTAAGCTTCAACAAGTTGTTGAGTTAAAAAGTCAGAGGAAAACTGACGATGCCGAGATCAGTATCAAGA
TTCAGCTGACAAAGATCCTGGAGCCGTGTTCTGACCTGTGCATCCCCTTCTACAATGTTGTCTTCCGGCG
GGTAATGAAACTTCTGGATATGAAGCTTGTGGGGAGAAACTTCTATGACCCTACAAGTGCCATGGTACTG
CAGCAACACAGATTGCAGATCTGGCCTGGCTATGCGGCTAGTATCCGGAGGACAGACGGGGGTCTCTTCC
TGCTCGCTGATGTCTCTCATAAGGTCATTCGGAACGACTCTGTGCTGGATGTCATGCATGCTATCTACCA
GCAGAACAAGGAGCACTTCCAGGACGAGTGCAGCAAGCTTCTGGTTGGCAGCATTGTCATCACGCGCTAC
AACAATCGTACCTACCGAATCGATGATGTGGACTGGAACAAGACCCCTAAAGACAGCTTTGTCATGTCGG
ACGGGAAGGAAATCACATTCCTGGAATACTACAGCAAAAACTATGGGATCACAGTCAAGGAAGATGACCA
GCCGCTGCTGATCCACCGGCCCAGTGAGAGACAGAATAACCATGGCATGTTGCTGAAGGGCGAGATCCTG
CTGCTGCCCGAGCTCTCCTTCATGACGGGGATCCCTGAGAAGATGAAGAAGGACTTCAGGGCCATGAAGG
ACTTGACTCAGCAGATTAACCTGAGCCCCAAGCAGCACCACGGTGCTTTGGAATGCCTGCTGCAGAGAAT
TTCACAAAACGAGACAGCCAGCAATGAGCTGACCCGCTGGGGGCTCAGTCTGCATAAAGATGTCCACAAG
ATTGAAGGTCGGCTTCTGCCAATGGAGAGGATCAACTTAAGGAACACTTCATTTGTCACATCGGAGGACC
TGAACTGGGTTAAGGAAGTGACCAGAGATGCTTCCATTCTAACTATTCCCATGCATTTCTGGGCACTCTT
TTATCCAAAGAGAGCAATGGACCAAGCCAGAGAACTGGTTAACATGTTGGAAAAGATTGCCGGGCCCATT
GGCATGCGCATAAGCCCCCCAGCCTGGGTTGAGCTGAAGGATGACCGAATAGAGACCTATATCAGGACCA
TTCAGTCCTTACTGGGAGTTGAGGGGAAGATACAAATGGTCGTTTGCATCATCATGGGCACACGTGATGA
TCTCTATGGAGCCATCAAGAAGCTGTGCTGCGTGCAGTCCCCAGTGCCCTCACAGGTCATCAATGTCCGA
ACCATTGGTCAGCCCACCAGGCTTCGGAGCGTGGCTCAGAAAATTTTACTTCAGATGAACTGTAAACTGG
GTGGTGAGCTCTGGGGAGTGGATATTCCGCTGAAACAACTAATGGTGATTGGAATGGATGTGTACCATGA
CCCCAGCAGAGGCATGCGCTCTGTGGTCGGCTTCGTGGCCAGCATAAATCTCACACTCACCAAATGGTAC
TCGAGGGTGGTGTTCCAGATGCCACATCAGGAGATTGTGGACAGCCTGAAGCTCTGCCTGGTGGGTTCCT
TGAAAAAGTATTATGAGGTGAACCATTGTCTCCCAGAGAAAATTGTGGTGTACCGAGATGGAGTGTCTGA
TGGCCAGCTAAAGACAGTTGCCAACTACGAGATCCCTCAGCTGCAGAAGTGTTTTGAAGCCTTTGATAAC
TACCACCCCAAGATGGTGGTGTTTGTAGTTCAGAAGAAAATCAGCACCAATCTGTACCTTGCTGCTCCTG
ATCACTTCGTAACCCCCTCCCCCGGGACTGTGGTTGATCATACCATAACCAGCTGTGAGTGGGTGGATTT
CTACCTTCTTGCCCATCATGTGCGACAGGGCTGTGGCATACCTACACACTACATCTGTGTTCTGAACACT
GCAAATCTGAGCCCTGATCACATGCAGAGGTTGACTTTCAAACTATGCCACATGTACTGGAATTGGCCTG
GTACCATCCGAGTTCCAGCTCCTTGCAAGTATGCCCACAAGCTAGCTTTCCTGTCCGGACAGATTTTGCA
TCATGAGCCAGCCATCCAGCTGTGTGGGAACCTGTTCTTCCTGTAA

ACGCGTACGCGGCCGCTCGAGCAGAAACTCATCTCAGAAGAGGATCTGGCAGCAAATGATATCCTGGATT
ACAAGGATGACGACGATAAGGTTTAA

Restriction Sites:	SgfI-MluI
ACCN:	NM_021308
Insert Size:	2916 bp
OTI Disclaimer:	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).
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:	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.
RefSeq:	NM_021308.1, NP_067283.1
RefSeq Size:	4913 bp
RefSeq ORF:	2916 bp
Locus ID:	57746
UniProt ID:	Q8CDG1
Cytogenetics:	14 D2

Gene Summary: Endoribonuclease that plays a central role during spermatogenesis by repressing transposable elements and preventing their mobilization, which is essential for the germline integrity (PubMed:11578866, PubMed:14736746, PubMed:17446352, PubMed:18381894, PubMed:18922463, PubMed:26669262). Plays an essential role in meiotic differentiation of spermatocytes, germ cell differentiation and in self-renewal of spermatogonial stem cells (PubMed:11578866, PubMed:14736746, PubMed:17446352, PubMed:18381894, PubMed:18922463, PubMed:26669262). Its presence in oocytes suggests that it may participate in similar functions during oogenesis in females (PubMed:11578866, PubMed:14736746, PubMed:17446352, PubMed:18381894, PubMed:18922463, PubMed:26669262). 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 govern the methylation and subsequent repression of transposons (PubMed:11578866, PubMed:14736746, PubMed:17446352, PubMed:18381894, PubMed:18922463, PubMed:26669262). During piRNA biosynthesis, plays a key role in the piRNA amplification loop, also named ping-pong amplification cycle, by acting as a 'slicer-competent' piRNA endoribonuclease that cleaves primary piRNAs, which are then loaded onto 'slicer-incompetent' PIWIL4 (PubMed:22020280, PubMed:23706823, PubMed:26669262). PIWIL2 slicing produces a pre-miRNA intermediate, which is then processed in mature piRNAs, and as well as a 16 nucleotide by-product that is degraded (PubMed:28633017). Required for PIWIL4/MIWI2 nuclear localization and association with secondary piRNAs antisense (PubMed:18381894, PubMed:18922463, PubMed:26669262). Besides their function in transposable elements repression, piRNAs are probably involved in other processes during meiosis such as translation regulation (PubMed:19114715). Indirectly modulates expression of genes such as PDGFRB, SLC2A1, ITGA6, GJA7, THY1, CD9 and STRA8 (PubMed:16261612). Represses circadian rhythms by promoting the stability and activity of core clock components ARNTL/BMAL1 and CLOCK by inhibiting GSK3B-mediated phosphorylation and ubiquitination-dependent degradation of these proteins (PubMed:28903391).[UniProtKB/Swiss-Prot Function]