

## Product datasheet for **MC222199**

### **Ago2 (NM\_153178) Mouse Untagged Clone**

#### **Product data:**

Product Type:	Expression Plasmids
Product Name:	Ago2 (NM_153178) Mouse Untagged Clone
Tag:	Tag Free
Symbol:	Ago2
Synonyms:	1110029L17Rik; 2310051F07Rik; AI225898; AL022874; AW546247; Eif2c2; ENSMUSG00000072493; Gerp95
Vector:	pCMV6-Entry (PS100001)
E. coli Selection:	Kanamycin (25 ug/mL)
Cell Selection:	Neomycin



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**Fully Sequenced ORF:** >MC222199 representing NM\_153178  
 Red=Cloning site Blue=ORF Orange=Stop codon

TTTTGTAATACGACTCACTATAGGGCGGCCGGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC  
 GCC**CGGATCGCC**

ATGTACTCGGGAGCCGGCCCGTTCTTGTCTCTCTGCTCCGACAACATCACCCATCCCAGGATATGCCT  
 TCAAACCTCCACCTCGGCCGGACTTCGGCACACCACCGGAGAACAACTCAAACCTACAGGCCAATTTCTTTGA  
 AATGGACATCCCCAAAATTGACATCTATCACTATGAATTGGACATCAAACCTGAGAAATGCCCTCGGAGA  
 GTGAACAGGGAAATTGTGGAGCACATGGTCCAGCACTTTAAAACCTCAGATCTTCGGGGACCGGAAGCCAG  
 TGTTTTGATGGAAGGAAGAATCTGTACACAGCAATGCCCTTCCGATCGGCAGGGACAAGGTGGAGCTGGA  
 GGTACGCTCCCGGGAGAAGGCAAAGATCGCATCTTTAAGGTATCCATCAAGTGGGTGTCGTGCGTGAGC  
 CTGCAGGCGTTACACGATGCACCTTCGGGGCGGCTGCCAGCGTCCCCTTCGAGACGATCCAGGCCCTGG  
 ACGTTGTCATGAGGCACTTACCATCCATGAGGTACACCCCTGTTGGCCGTTCTTCTTCACTGCATCTGA  
 AGGCTGTTCCAACCTCTGGGTGGGGCAGAGAAGTGTGGTTTGGCTTCCATCAGTCCGTCGGACCTTCT  
 CTTTGGAAAATGATGCTGAATATTGATGTATCGGCAACAGCGTTTTACAAGGCACAGCCAGTGATCGAGT  
 TTGTTTGTGAAGTTTTGGATTTAAAAGTATTGAAGAACAACAAAACCTCTGACAGATTCCTAAAAGGGT  
 AAAGTTTACCAAAGAAATCAAAGGTCTAAAGGTGGAGTAACGCCTGTGGTTCAGATGAAGAGGAAGTAC  
 CGTGTCTGCAATGTGACCCGGCGGCCTGCCAGTCACCAAACGTTCCCACTGCAGCAGGAGAGTGGGCAGA  
 CAGTGGAGTGTACAGTGGCCAGTACTTCAAGGACAGGCACAAGTGGTTCGCGTACCCCCACCTCCC  
 GTGTTTACAAGTCGGACAGGAGCAGAAACACACCTACCTTCTTTGGAGGTCTGTAAATAGTTGCTGGA  
 CAGAGATGTATAAAAAAATTAACAGACAATCAGACCTCAACCATGATCAGAGCAACTGCCAGTCCAGCAC  
 CTGATCGCCAAGAGGAGATCAGCAAACCTGATCGGAAGTCAAGTTTCAATACAGACCCATATGTTCTGTA  
 ATTTGGAATCATGGTGAAGATGAGATGACAGATGTGACTGGGCGGTTCTGCAGCCGCCCTCCATCCTC  
 TACGGGGCAGGAACAAAGCAATTGCCACCCCTGTCCAGGGTGTGGGACATGCGAAACAGCAGTTCC  
 ACACGGGCATCGAGATCAAGGTGTGGGCCATCGCCTGCTTCGCTCCCCAGCGCCAGTGTACAGAAGTCCA  
 TCTCAAGTCTTACAGAGCAACTGAGGAAGATCTCGAGAGATGCTGGGATGCCGATCCAGGGTCAGCCC  
 TGCTTCTGTAATACGCACAGGGTGCAGACAGTGTGGAGCCCATGTTCCGACACCTGAAGAACACATACG  
 CTGGCCTCCAGCTGGTGGTGGTCACTCTGCCTGGCAAACTCCTGTGTATGCGGAAGTCAAGCGTGTGGG  
 AGACACAGTGTGGGATGGCCACACAGTGCCTCCAGATGAAGAACGTGCAGAGGACCACGCCACAGACC  
 CTATCCAATCTCTGCTTAAAGATCAATGTCAAACCTGGGAGCGTCAACAACATCTGCTGCCACAGGGCA  
 GGCTCCAGTGTCCAGCAACCTGTATCTTCTGGGAGCCGATGTACCCACCCACCAGCTGGGGATGG  
 GAAGAAACCTTCTATTGCTGCCGTGCTGGGCAGCATGGACGCACACCCCAACCGCTACTGTGCCACCGTG  
 CGCGTGCAGCAGCACCGACAGGAGATCATCCAGGACCTGGCTGCCATGGTACGAGAGTTGCTCATTCACT  
 TCTACAAGTCCACCCGCTTCAAGCCCACCCGCATCATCTTCTACCGCGATGGCGTCTCCGAGGGCCAGTT  
 CCAGCAGGTTCTCCACCATGAGCTCCTGGCCATCAGAGAGGCCTGCATCAAGCTGGAGAAGGACTATCAG  
 CCAGGAATCACGTTTCATCGTGGTGCAGAAGCGGCACCACACGCCTCTTCTGCACAGACAAAAATGAGC  
 GGGTTGGGAAGAGTGGGAACATTCGCCAGGCACAACCGTGGACACGAAGATCACCCACCCCACTGAGTT  
 TGACTTCTACCTGTGCAGTACGCCGGCATCCAGGGGACAAGCCGTCCTTCCCACTACCAGTGCCTTTGG  
 GATGACAATCGTTTTTCTTCTGATGAGCTGCAGATTCTGACCTACCAGCTGTGTACACCTACGTGCGCT  
 GCACACGCTCTGTGTCAATACCCGCGCCAGCTTACTATGCTCACCTGGTGGCCTTCCGAGCCAGGTACCA  
 CCTGGTGGATAAAGAACATGACAGCGCTGAAGGAAGCCATACCTCTGGGCAGAGCAACGGGCGAGATCAC  
 CAAGCGCTGGCCAAGGCGGTCCAGGTCCACCAGGACACACTGCGCACCATGTACTTTGCT**TGA**

**ACGCGT**ACGCGGCCGCTCGAGCAGAACTCATCTCAGAAGAGGATCTGGCAGCAAATGATATCCTGGATT  
 ACAAGGATGACGACGATAAGGTTTAA

**Restriction Sites:** SgfI-MluI  
**ACCN:** NM\_153178  
**Insert Size:** 2583 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>	<a href="#">NM_153178.4</a> , <a href="#">NP_694818.3</a>
<b>RefSeq Size:</b>	8031 bp
<b>RefSeq ORF:</b>	2583 bp
<b>Locus ID:</b>	239528
<b>UniProt ID:</b>	<a href="#">Q8CJG0</a>
<b>Cytogenetics:</b>	15 D3

**Gene Summary:**

Required for RNA-mediated gene silencing (RNAi) by the RNA-induced silencing complex (RISC). The 'minimal RISC' appears to include AGO2 bound to a short guide RNA such as a microRNA (miRNA) or short interfering RNA (siRNA). These guide RNAs direct RISC to complementary mRNAs that are targets for RISC-mediated gene silencing. The precise mechanism of gene silencing depends on the degree of complementarity between the miRNA or siRNA and its target. Binding of RISC to a perfectly complementary mRNA generally results in silencing due to endonucleolytic cleavage of the mRNA specifically by AGO2. Binding of RISC to a partially complementary mRNA results in silencing through inhibition of translation, and this is independent of endonuclease activity. May inhibit translation initiation by binding to the 7-methylguanosine cap, thereby preventing the recruitment of the translation initiation factor eIF4-E. May also inhibit translation initiation via interaction with EIF6, which itself binds to the 60S ribosomal subunit and prevents its association with the 40S ribosomal subunit. The inhibition of translational initiation leads to the accumulation of the affected mRNA in cytoplasmic processing bodies (P-bodies), where mRNA degradation may subsequently occur. In some cases RISC-mediated translational repression is also observed for miRNAs that perfectly match the 3' untranslated region (3' UTR). Can also up-regulate the translation of specific mRNAs under certain growth conditions. Binds to the AU element of the 3' UTR of the TNF (TNF-alpha) mRNA and up-regulates translation under conditions of serum starvation. Also required for transcriptional gene silencing (TGS), in which short RNAs known as antigene RNAs or agRNAs direct the transcriptional repression of complementary promoter regions. Regulates lymphoid and erythroid development and function, and this is independent of endonuclease activity.[UniProtKB/Swiss-Prot Function]