

## Product datasheet for **MG227026**

### Ago2 (NM\_153178) Mouse Tagged ORF Clone

#### Product data:

Product Type:	Expression Plasmids
Product Name:	Ago2 (NM_153178) Mouse Tagged ORF Clone
Tag:	TurboGFP
Symbol:	Ago2
Synonyms:	1110029L17Rik; 2310051F07Rik; AI225898; AL022874; AW546247; Eif2c2; ENSMUSG00000072493; Gerp95
Mammalian Cell Selection:	Neomycin
Vector:	pCMV6-AC-GFP (PS100010)
E. coli Selection:	Ampicillin (100 ug/mL)



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**ORF Nucleotide Sequence:**

>MG227026 representing NM\_153178  
 Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC  
 GCC**CGGATCGCC**

ATGTA**CTCGGGAGCCGGCCCGTTCTTGCTTCTCCTGCTCGACAACATCACCCATCCCAGGATATGCCT**  
 TCAAACCTCCACCTCGGCCGGACTTCGGCACACCAGGGAGAACAATCAAACCTACAGGCCAATTTCTTTGA  
 AATGGACATCCCCAAAATTGACATCTATCACTATGAATTGGACATCAAACCTGAGAAATGCCCTCGGAGA  
 GTGAACAGGGAAATTGTGGAGCACATGGTCCAGCACTTTAAAACCTCAGATCTTCGGGGACCGGAAGCCAG  
 TGTTTTGATGGAAGGAAGAATCTGTACACAGCAATGCCCTTCCGATCGGCAGGGACAAGGTGGAGCTGGA  
 GGTACAGCTCCCGGGAGAAGGCAAAGATCGCATCTTTAAGGTATCCATCAAGTGGGTGTCGTGCGTGAGC  
 CTGCAGGCGTTACACGATGCACCTTCGGGGCGGCTGCCACGCTCCCTTCGAGACGATCCAGGCCCTGG  
 ACGTTGCATGAGGCACTTACCATCCATGAGGTACACCCCTGTTGGCCGTTCTTCTTCACTGCATCTGA  
 AGGCTGTTCCAACCTCTGGGTGGGGCAGAGAAGTGTGGTTTGGCTTCCATCAGTCCGTCGGACCTTCT  
 CTTTGGAAAATGATGCTGAATATTGATGTATCGGCAACAGCGTTTTACAAGGCACAGCCAGTGATCGAGT  
 TTGTTTGTGAAGTTTTGGATTTTAAAAGTATTGAAGAACAACAAAACCTCTGACAGATTCACAAAGGGT  
 AAAGTTTACCAAAGAAATCAAAGGTCTAAAGGTGGAGTAACGCCTGTGGTTCAGATGAAGAGGAAGTAC  
 CGTGTCTGCAATGTGACCCGGCGGCCTGCCAGTCACCAAACGTTCCCACTGCAGCAGGAGAGTGGGCAGA  
 CAGTGGAGTGTACAGTGGCCAGTACTTCAAGGACAGGCACAAGTGGTTCGCGTACCCCCACCTCCC  
 GTGTTTACAAGTCGGACAGGAGCAGAAACACACCTACCTTCTTTGGAGGTCTGTAAATAGTTGCTGGA  
 CAGAGATGTATAAAAAAATTAACAGACAATCAGACCTCAACCATGATCAGAGCAACTGCCAGTCCAGCAC  
 CTGATCGCCAAGAGGAGATCAGCAAAGTGCAGAGTGTGACTGGGGCGGTTCTGCAGCCGCCCTCCATCCTC  
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 TCTCAAGTCTTTCACAGACCACTGAGGAAGATCTCGAGAGATGCTGGGATGCCGATCCAGGGTCCAGCCC  
 TGCTTCTGTAATACGCACAGGGTGCAGACAGTGTGGAGCCCATGTTCCGACACCTGAAGAACACATACG  
 CTGGCCTCCAGCTGGTGGTGGTCACTCTGCCTGGCAAACTCCTGTGTATGCGGAAGTCAAGCGTGTGGG  
 AGACACAGTGTGGGGATGGCCACACAGTGCCTCCAGATGAAGAACGTGCAGAGGACCACGCCACAGACC  
 CTATCCAATCTCTGCTTAAAGATCAATGTCAAACCTGGGAGCGTCAACAACATCCTGCTGCCACAGGGCA  
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 CCAGCAGGTTCTCCACCATGAGCTCCTGGCCATCAGAGAGGCCTGCATCAAGCTGGAGAAGGACTATCAG  
 CCAGGAATCACGTTTCATCGTGGTGCAGAAGCGGCACCACACGCCTCTTCTGCACAGACAAAAATGAGC  
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 TGACTTCTACCTGTGCAGTCCAGCCGGCATCCAGGGACAAGCCGTCCTTCCCACTACCAGTGCCTTTGG  
 GATGACAATCGTTTTTCTTCTGATGAGCTGCAGATTCTGACCTACCAGCTGTGTACACCTACGTCGCGCT  
 GCACACGCTCTGTGTCAATACCCGCGCCAGCTTACTATGCTCACCTGGTGGCCTTCCGAGCCAGGTACCA  
 CCTGGTGGATAAAGAACATGACAGCGCTGAAGGAAGCCATACCTCTGGGCAGAGCAACGGGCGAGATCAC  
 CAAGCGCTGGCCAAGGCGGTCCAGGTCCACCAGGACACACTGCGCACCATGTACTTTGCT

**ACGCGTACGCGGCCGCTCGAG** - GFP Tag - GTTTAA

**Protein Sequence:** >MG227026 representing NM\_153178  
 Red=Cloning site Green=Tags(s)

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MYSGAGPVLASAPTTSPIPGYAFKPPRPDFGTTGRTIKLQANFFEMDIPKIDIYHYELDIKPEKCPRR
VNREIVEHMQHFKTQIFGDRKPVFDGRKNLYTAMPLPIGRDKVELEVTLPGEGKDRIKVSIKWVSCVS
LQALHDALSGRLPSVPFETIQALDVVMRHLPSMRYTPVGRSFFTASEGCSNPLGGGREVWFGFHQSVRPS
LWKMLNIDVSATAFYKAQPVIEFVCEVLDFKSIIEEQKPLTDSQRVKFKEIKGLKVEITHCGQMKRKY
RVCNVTRRPASHQTFPLQQESGQTVECTVAQYFKDRHKLVLRYPHLPCLQVQEQKHTYLPLEVCNIVAG
QRCIKKLTDNQTSTMIRATARSAPDRQEEISKLMRSASFNTDPYVREFGIMVKDEMTDVTGRVLPQPSIL
YGGRNKAIATPVQGVWDMRNKQFHTGIEIKVWAIACFAPQRQCTEVHLKSFTEQLRKISR DAGMPIQQQP
CFCKYAQGADSV EPMFRHLKNTYAGLQLVVVILPGKTPVYAEVKRVGDTVLGMATQCVQMKNVQRTTPTQ
LSNLCLKINVKLGGVNNILLPQGRPPVFQQPVI FLGADVTHPPAGDGKKPSIAAVVGSMDAHPNRYCATV
RVQQRHQEIIQDLAAMVRELLIQFYKSTRFKPTRIIFYRDGVSEGQFQQVLHELLLAIREACIKLEKDYQ
PGITFIVVQKRHHTRLFCTDKNERVKGSGNIPAGTTVDTKITHPTEFDYLC SHAGIQGTSRPSHYHVLW
DDNRFSSDELQILTYQLCHTYVRCRTRSVSIPAPAYYAHLVAFRARYHLVDKEHDSAEGSHTSGQSNGRDH
QALAKAVQVHQDTLRTMYFA
  
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TRTRPLE - GFP Tag - V

**Restriction Sites:**

SgfI-MluI

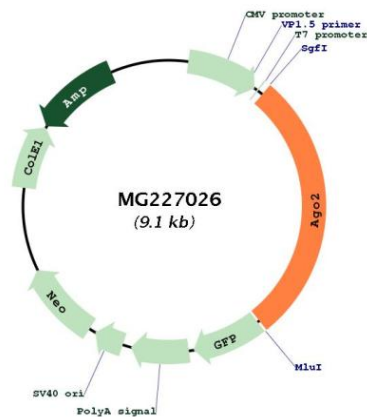
**Cloning Scheme:**



ACCN:	NM_153178
ORF Size:	2580 bp
OTI Disclaimer:	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. <a href="#">More info</a>
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"><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_153178.4</a> , <a href="#">NP_694818.3</a>
RefSeq Size:	8031 bp
RefSeq ORF:	2583 bp
Locus ID:	239528
UniProt ID:	<a href="#">Q8CJG0</a>
Cytogenetics:	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]

**Product images:**


Circular map for MG227026