

## Product datasheet for MR211518

### Atp2a2 (NM\_001110140) Mouse Tagged ORF Clone

#### Product data:

Product Type:	Expression Plasmids
Product Name:	Atp2a2 (NM_001110140) Mouse Tagged ORF Clone
Tag:	Myc-DDK
Symbol:	Atp2a2
Synonyms:	9530097L16Rik; D5Wsu150e; mKIAA4195; SERCA2; Serca2a; SERCA2B
Mammalian Cell Selection:	Neomycin
Vector:	pCMV6-Entry (PS100001)
E. coli Selection:	Kanamycin (25 ug/mL)
ORF Nucleotide Sequence:	>MR211518 representing NM_001110140 Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC  
GCC**CGATCGCC**

ATGGAGAACGCTCACACAAGACCGTGGAGGAGGTGCTGGGCCACTTCGGGGTCAACGAGAGCACGGGGC  
TGAGCTTGGAGCAGGTCAAGAAGCTCAAGGAGAGATGGGGCTCCAACGAATTGCCGGCTGAAGAAGGAAA  
AACCTTGTGGAAGTGTGATTGAGCAGTTGAAGACTTACTAGTTAGAATTTACTGCTGGCAGCATGT  
ATATCTTTCGTTTGGCTTGGTTCGAGGAAGGGGAAGAAACGATTACAGCCTTGTAGAGCCGTTGTAA  
TTCTGCTTATCTTGGTAGCCAATGCAATCGTGGGTGTGTGGCAGGAAAGAAATGCTGAAAATGCAATAGA  
AGCTCTTAAGGAATATGAGCCTGAAATGGGCAAAGTGTATCGACAGGACAGAAAGAGTGTGCAACGAATT  
AAAGCTAAAGACATAGTTCCTGGTGATATAGTGAAAATTGCTGTTGGTGACAAAGTTCCTGCTGATTA  
GATTGACATCCATCAAGTCTACAACCTAAGAGTCGACCAGTCAATTCCTACAGGTGAATCTGTCTCCGT  
CATCAAGCATACTGACCCGTGCCCTGACCCCGAGCTGTTAATCAAGACAAAAGAACAATGCTCTTTTCT  
GGTACAAAATTGCTGCTGGGAAAGCTATGGGAGTGGTGGTGGCAACTGGAGTTAATACTGAGATCGGCA  
AGATCCGGGATGAAATGGTGGCAACAGAACAGGAGAGAACACCCCTACAGCAGAAGCTAGACGAGTTTGG  
GGAGCAGCTTCCAAAGTTATCTCCCTCATTTGCATTGCAGTCTGGATCATCAACATTGGGCATTTCAAT  
GACCCAGTTCATGGTGGCTCCTGGATCAGGGGTGCCATCTACTTTAAGATTGCCGTGGCCCTGGCTG  
TTGCCGCAATCCCTGAGGGTCTGCCTGCTGTCATCACCACCTGCTTAGCTCTTGGAACTCGTAGGATGGC  
AAAGAAAATGCTATCGTTCGAAGTCTGCCTTCTGTGGAGACCCTTGGTGTACTTCTGTTATCTGCTCA  
GATAAGACAGGCACACTTACCACAAACCAGATGTCGGTGTGCAGGATGTTCAATCTGGACAAAGTAGAAG  
GTGACACTTGTCCCTTAATGAGTTCAGCATAACTGGATCCACATATGCACCAATTGGAGAAGTGCAAAA  
GGATGATAAGCCAGTGAAGTGCCATCAGTATGACGGGCTTGTAGAGTTAGCCACCATCTGTGCTCTGTGT  
AATGACTCTGCTTTGGATTATAATGAGGCAAAGGGTGTGTATGAGAAAAGTTGGAGAAGCTACCGAGACTG  
CTCTCACGTGCCTGGTGGAGAAGATGAATGATTTGATACTGAGCTGAAGGGCTTTCTAAAATAGAGCG  
TGCAAACGCTGCAACTCGGTCAATAAGCAGCTGATGAAGAAGGAGTTCACTCTGGAGTTTTCACGGGAT



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AGAAAATCAATGTCCGTCTATTGTACCCCAAACAAGCCAAGCCGGACATCCATGAGCAAGATGTTTGTGA  
 AGGGGGCTCCAGAAGGTGCATCGATAGGTGCACCCACATCCGAGTTGGAAGTACCAAGTCCCCATGAC  
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 TCTCCTTCTACCAGCTGAGTCATTTCTACAGTGAAGGAGGACAACCCAGACTTCGATGGAGTGGATTG  
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 GCCCTCAACAGCTTGCTGAAAACCACTTTGCTGAGGATGCCCCCTGGGAGAATATCTGGCTCGTGG  
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 GATCACACCGTGAATCTGACCCAGTGGCTGATGGTGTGAAAATCTCCTGCTGTGATCCTCATGGAT  
 GAGACGCTCAAGTTTGTGCCCGAAACTACCTGGAACAACCCGGTAAAGAGTGTGTGCAGCCTGCCACCA  
 AATCTTCTGCTCCCTGTCCGCATGCACCGATGGCATTTCCTGGCCGTTTGTGCTGCTCATTATGCCCT  
 GGTGGTCTGGGTCTACAGCACAGACACTAACTTACGCATATGTTCTGGTCT

ACGCGTACGCGGCCGCTCGAGCAGAACTCATCTCAGAAGAGGATCTGGCAGCAATGATATCCTGGATT  
 ACAAGGATGACGACGATAAGGTTTAA

**Protein Sequence:**

>MR211518 representing NM\_001110140  
 Red=Cloning site Green=Tags(s)

MENAHKTVEEVLGHFGVNESTGLSLEQVKLKERWGSNELPAEEGKTLLELVIEQFEDLLVRIILAAAC  
 ISFVLAWFEEGETITAFVEPFVILLILVANAIIVGVWQERNAENAIEALKEYEPEMGKVYRQDRKSVQRI  
 KAKDIVPGDIVEIAVGDKVPADIRLTSIKSTTLRVDQSILTGESVSVIKHTDPVPDPRAVNQDKKNMLFS  
 GTNIAAGKAMGVVATGVNTEIGKIRDEMVAEQERTPLQQLDEFGEQLSKVISLICIAVWIINIGHFN  
 DPVHGGSWIRGAIYYFKIAVALAVAAIPEGLPAVITTCALGTRRMAKKNAIVRSLPSVETLGTSTVICS  
 DKTGTLTTNQMSVCRMFLDKVEGDTCSLNEFSITGSTYAPIGEVQKDDKPVKCHQYDGLVELATICALC  
 NDSALDYNEAKGVYEKVGAEATETALTCLVEKMNVDTELKGLSKIERANACNSVIKQLMKKEFTLEFSRD  
 RKSMSVYCTPNKPSRTSMKMFVGAPEGVDRCTHIRVGSTKVPMPGKQKIMSVIREWGS SDTLRC  
 LALATHDNPLKREEMHLEDSANFIKYETNLTFVGCVGMDDPPRIEVASSVKLCRQAGIRVIMITGDNKGT  
 AVAICRRIGIFGQDEDVTSKAFTGREFDELSPSAQRDAACLNARCFARVEPSHKSKIVEFLQSFDEITAMT  
 GDGVNDAPALKKSEIGIAMSGTAVAKTASEMVLADDFSTIVAAVEEGRAIYNNMKQFIRYLISNVGE  
 VVCIFLTAALGFPEALIPVQLLWVNLVTDGLPATALGFNPPDLDIMNKPPRNPKLEPLISGWLFFRYLAIG  
 CYVGAATVGAAWWFIAADGGPRVSFYQLSHFLQCKEDNPDFDGVDCAI FESPYPMTMALSVLVTIEMCN  
 ALNSLSENQSLLRMPWENIWL VGSICLSMSLHFLILYVEPLPLIFQITPLNLTQWLMVLKISLPVILMD  
 ETLKFVARNYLEQPGKECVQPATKSSCSLSACTDGI SWPFVLLIMPLVWVYSTDNFS DMFWS

TRTRPLEQKLI SEEDLAANDILDYKDDDDKV

**Restriction Sites:**

SgfI-MluI

## Cloning Scheme:



ACCN: NM\_001110140

ORF Size: 3132 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](mailto: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:**

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\\_001110140.3](#), [NP\\_001103610.1](#)

**RefSeq Size:** 4565 bp

**RefSeq ORF:** 3135 bp

**Locus ID:** 11938

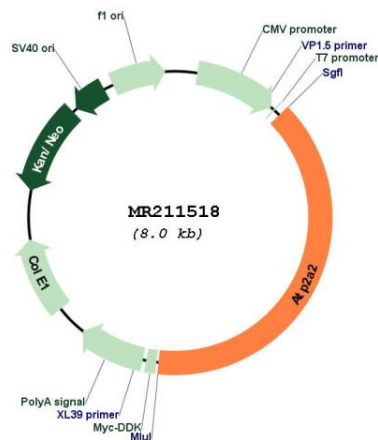
**UniProt ID:** [O55143](#)

**Cytogenetics:** 5 F

**MW:** 115.3 kDa

**Gene Summary:** This magnesium-dependent enzyme catalyzes the hydrolysis of ATP coupled with the translocation of calcium from the cytosol to the sarcoplasmic reticulum lumen. Isoform SERCA2A is involved in the regulation of the contraction/relaxation cycle. Acts as a regulator of TNFSF11-mediated Ca(2+) signaling pathways via its interaction with TMEM64 which is critical for the TNFSF11-induced CREB1 activation and mitochondrial ROS generation necessary for proper osteoclast generation. Association between TMEM64 and SERCA2 in the ER leads to cytosolic Ca (2+) spiking for activation of NFATC1 and production of mitochondrial ROS, thereby triggering Ca (2+) signaling cascades that promote osteoclast differentiation and activation (PubMed:23395171).[UniProtKB/Swiss-Prot Function]

### Product images:



Circular map for MR211518

