

## Product datasheet for RC222754

### SERCA2 (ATP2A2) (NM\_001681) Human Tagged ORF Clone

#### Product data:

Product Type:	Expression Plasmids
Product Name:	SERCA2 (ATP2A2) (NM_001681) Human Tagged ORF Clone
Tag:	Myc-DDK
Symbol:	SERCA2
Synonyms:	ATP2B; DAR; DD; SERCA2
Mammalian Cell Selection:	Neomycin
Vector:	pCMV6-Entry (PS100001)
E. coli Selection:	Kanamycin (25 ug/mL)
ORF Nucleotide Sequence:	>RC222754 representing NM_001681 Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC  
GCC**CGATCGCC**

ATGGAGAACGCGCACACCAAGACGGTGGAGGAGGTGCTGGGCCACTTCGGCGTCAACGAGAGTACGGGGC  
TGAGCCTGGAACAGGTCAAGAAGCTTAAGGAGAGATGGGGCTCCAACGAGTTACCGGCTGAAGAAGGAAA  
AACCTTGCTGGAACCTTGATTGAGCAGTTGAAGACTTGCTAGTTAGGATTTTATTACTGGCAGCATGT  
ATATCTTTTGTGGCTTGGTTGAAGAAGGTGAAGAAACAATTACAGCCTTTGTAGAACCTTTGTAA  
TTTTACTCATATTAGTAGCCAATGCAATTGTTGGGTGTATGGCAGGAAAGAAATGCTGAAAATGCCATCGA  
AGCCCTTAAGGAATATGAGCCTGAAATGGGCAAAGTGTATCGACAGGACAGAAAGAGTGTGCAGCGGATT  
AAAGCTAAAGACATAGTTCTGTTGATATTGTAGAAAATTGCTGTTGGTGACAAAGTTCCTGCTGATATA  
GGTTAACTTCCATCAAATCTACCACACTAAGAGTTGACCAGTCAATTCTCACAGGTGAATCTGTCTCTGT  
CATCAAGCACACTGATCCCGTCCCTGACCCACGAGCTGTCAACCAAGATAAAAAGAACAATGCTGTTTTCT  
GGTACAAACATTGCTGCTGGGAAAGCTATGGGAGTGGTGGTAGCAACTGGAGTTAACACCGAAATGGCA  
AGATCCGGGATGAAATGGTGGCAACAGAACAGGAGAGAACACCCCTTCAGCAAAAAGTATGATGAATTTGG  
GGAACAGCTTTCCAAAGTCATCTCCCTTATTTGCATTGCAGTCTGGATCATAAATATTGGCACTTCAAT  
GACCCGGTTCATGGAGGTCCTGGATCAGAGGTGCTATTTACTACTTTAAAATTCAGTGGCCCTGGCTG  
TAGCAGCCATTCCTGAAGGTCTGCCTGCAGTCATCACCACCTGCCTGGCTCTTGGAACTCGCAGAATGGC  
AAAGAAAAATGCCATTGTTCAAGCCTCCCGTCTGTGAAACCTTGGTTGACTTCTGTTATCTGCTCA  
GACAAGACTGGTACACTTACAACAAACCAGATGTCAGTCTGCAGGATGTTCAATCTGGACAGAGTGGAAAG  
GTGATACTTGTCCCTTAATGAGTTTACCATAACTGGATCAACTTATGCACCTATTGGAGAAGTGCATAA  
AGATGATAAACCAGTGAATTGTCACCAGTATGATGGTCTGGTAGAATTAGCAACAATTTGTGCTCTTTGT  
AATGACTCTGCTTTGGATTACAATGAGGCAAAGGGTGTGATGAAAAAGTTGGAGAAGCTACAGAGACTG  
CTCTCACTGCCTAGTAGAGAAGATGAATGATTTGATACCGAATTGAAGGGTCTTTCTAAAATAGAACG  
TGCAAATGCCTGCAACTCAGTCATTAACAGCTGATGAAAAAGGAATTCCTCTAGAGTTTTCACGTGAC



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AGAAAGTCAATGTCGGTTTACTGTACACCAAATAAACCAAGCAGGACATCAATGAGCAAGATGTTTGTGA  
 AGGGTGCTCCTGAAGGTGCATTGACAGGTGCACCCACATTTCGAGTTGGAAGTACTAAGGTTCTATGAC  
 CTCTGGAGTCAAACAGAAGATCATGTCTGTCATTTCGAGAGTGGGGTAGTGGCAGCGACACACTGCGATGC  
 CTGGCCCTGGCCACTCATGACAACCCACTGAGAAGAGAAGAAATGCACCTTGAGGACTCTGCCAACTTTA  
 TAAATATGAGACCAATCTGACCTTCGTTGGCTGCGTGGGCATGCTGGATCCTCCGAGAATCGAGGTGGC  
 CTCTCCGTGAAGCTGTGCCGCAAGCAGGCATCCGGGTATCATGATCACTGGGACAAACAAGGGCACT  
 GCGGGGAGTTTATGAACTCAACCCCTCCGCCAGCGAGACGCCTGCCTGAACGCCGCTGTTTTGCTCG  
 AGTTGAACCCCTCCACAAGTCTAAAATCGTAGAATTTCTTCAGTCTTTTATGAGATTACAGCTATGACT  
 GGCGATGGCGTGAACGATGCTCCTGCTCTGAAGAAAGCCGAGATTGGCATTGCTATGGGCTCTGGCACTG  
 CGGTGGCTAAAACCGCCTCTGAGATGGTCTGGCGGATGACAACCTCTCCACCATTGTGGCTGCCGTTGA  
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 GTTGTCTGATTTTCTGACAGCAGCCCTTGGATTTCCCGAGGCTTTGATTCCTGTTTCACTGCTCTGGG  
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 TAAACCTCCCGAACCACAAAGGAACCATTGATCAGCGGGTGGCTTTTTCCGTTACTTGGCTATTGGC  
 TGTACGTGCGGCTGCTACCGTGGTGCCTGCTGATGGTGGTTATTGCTGCTGACGGTGGTCCAGAG  
 TGTCTTCTACCAGCTGAGTCATTTCTACAGTGTAAAGAGGACAACCCGGACTTTGAAGCGTGGATTG  
 TGCAATCTTTGAATCCCATACCCGATGACAATGGCGCTCTGTTCTAGTAACTATAGAAATGTGTAAC  
 GCCCTCAACAGCTTGCCGAAAACAGTCTTGTGAGGATGCCCCCTGGGAGAACATCTGGCTCGTGG  
 GCTCCATCTGCCTGTCCATGTCCTCCACTTCTGATCCTCTATGTCGAACCCCTGCCACTCATCTTCCA  
 GATCACACCGTGAACGTGACCCAGTGGCTGATGGTGTGAAAATCTCCTTGCCCGTATTCTCATGGAT  
 GAGACGCTCAAGTTTGTGGCCGCAACTACCTGGAACCTGCAATACTGGAG

ACGCGTACGCGGCGCTCGAGCAGAAACTCATCTCAGAAGAGGATCTGGCAGCAAATGATATCCTGGATT  
 ACAAGGATGACGACGAT AAGGTTTAA

**Protein Sequence:**

>RC222754 representing NM\_001681  
 Red=Cloning site Green=Tags(s)

MENAHKTVEEVLGHFGVNESTGLSLEQVKKLKERWGSNELPAEEGKTLLELVIEQFEDLLVRILLAAAC  
 ISFVLAWFEEGETITAFVEPFVILLILVANAIIVGVWQERNAENAIEALKEYEPEMGKVYRQDRKSVQRI  
 KAKDIVPGDIVEIAVGDKVPADIRLTSIKSTTLRVDQSILTGESVSVIKHTDPVPPRAVNQDKNMLFS  
 GTNIAAGKAMGVVATGVNTEIGKIRDEMVAEQERTPLQKLEDFGEQLSKVISLICIAVWIINIGHFN  
 DPVHGGSWIRGAIYYFKIAVALAVAAIPEGLPAVITTTCLALGTRRMAKKNAIVRSLPSVETLGCTSVICS  
 DKTGTLTTNQMSVCRMFLDRVEGDTCSLNEFTITGSTYAPIGEVHKDDKPNCHQYDGLVELATICALC  
 NDSALDYNEAKGVYKVEATETALTCLVEKMNVFDELKGLSKIERANACNSVIKQLMKKEFTLEFSRD  
 RKSMSVYCTPNKPSRTSMSKMFVKGAPGVIDRCTHIRVGSTKVPMTSGVKQKIMSVIREWGSGLTLRC  
 LALATHDNPLRREEMHLED SANFIKYETNLTFVGCVGMDDPPRIEVASSVKLCRQAGIRVIMITGDNKGT  
 AVAICRRIGIFGQDEDVTSKAFTGREFDELNPSAQORDACLNARCFARVEPSHKSKIVEFLQSFDEITAMT  
 GDGVNDAPALKKAEIGIAMSGTAVAKTASEMVLADDFSTIVAAVEEGRAIYNNMKQFIRYLISSNVGE  
 VVICIFLTAALGFPEALIPVQLLWVNLVTDGLPATALGFNPPDLIMNKPPRNPKPEPLISGWLFFRYLAIG  
 CYVGAATVGAAAWFIAADGGPRVSFYQLSHFLQCKEDNPDFEGVDCAIFESPYPMTMALSVLVTIEMCN  
 ALNSLSENQSLLRMPWENIWL VGSICLSMSLHFLILYVEPLPLIFQITPLNVTQWMLVKISLPVILMD  
 ETLKFVARNYLEPAILE

TRTRPLEQKLI SEEDLAANDILDYKDDDDKV

**Restriction Sites:**

Sgfl-MluI

**Cloning Scheme:**



ACCN: NM\_001681

ORF Size: 2991 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.

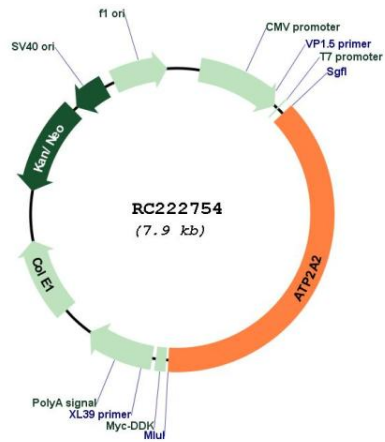
The molecular sequence of this clone aligns with the gene accession number as a point of reference only. However, individual transcript sequences of the same gene can differ through naturally occurring variations (e.g. polymorphisms), each with its own valid existence. This clone is substantially in 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).

<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_001681.4</a>
<b>RefSeq Size:</b>	4359 bp
<b>RefSeq ORF:</b>	2994 bp
<b>Locus ID:</b>	488
<b>UniProt ID:</b>	<a href="#">P16615</a>
<b>Cytogenetics:</b>	12q24.11
<b>Domains:</b>	E1-E2_ATPase, Cation_ATPase_N, Hydrolase, Cation_ATPase_C
<b>Protein Families:</b>	Druggable Genome, Transmembrane
<b>Protein Pathways:</b>	Alzheimer's disease, Arrhythmogenic right ventricular cardiomyopathy (ARVC), Calcium signaling pathway, Cardiac muscle contraction, Dilated cardiomyopathy, Hypertrophic cardiomyopathy (HCM)
<b>MW:</b>	109.7 kDa
<b>Gene Summary:</b>	This gene encodes one of the SERCA Ca(2+)-ATPases, which are intracellular pumps located in the sarcoplasmic or endoplasmic reticula of the skeletal muscle. This enzyme catalyzes the hydrolysis of ATP coupled with the translocation of calcium from the cytosol into the sarcoplasmic reticulum lumen, and is involved in regulation of the contraction/relaxation cycle. Mutations in this gene cause Darier-White disease, also known as keratosis follicularis, an autosomal dominant skin disorder characterized by loss of adhesion between epidermal cells and abnormal keratinization. Other types of mutations in this gene have been associated with various forms of muscular dystrophies. Alternative splicing results in multiple transcript variants encoding different isoforms. [provided by RefSeq, Dec 2019]

Product images:



Circular map for RC222754