

## Product datasheet for **SC322530**

### Caldesmon (CALD1) (NM\_004342) Human Untagged Clone

#### Product data:

Product Type:	Expression Plasmids
Product Name:	Caldesmon (CALD1) (NM_004342) Human Untagged Clone
Tag:	Tag Free
Symbol:	Caldesmon
Synonyms:	CDM; H-CAD; HCAD; L-CAD; LCAD; NAG22
Mammalian Cell Selection:	Neomycin
Vector:	pCMV6-AC (PS100020)
E. coli Selection:	Ampicillin (100 ug/mL)

**Fully Sequenced ORF:** >OriGene sequence for SC322530  
 CTGTGCTCCTGCTTAAAGAAATCAGTCCTTCTTCCGACTTAGTCTCGGGAAGAAGTT  
 TCAGACTACAAGGTATCATTGGAACATTTCAAGATCATCAAATCAAATCCACAGGGATT  
 GGTGACCAACCAGAAGGCTCAGACATCTGATTGCTGACCTGTCCAGACATCATCTGGTCT  
 CCCTGAACCTGAAATCACACCATGGATGATTTTGAGCGTCGCAGAGAAGTTAGAAGGCAA  
 AAGAGGGAGGAGATGCGACTCGAAGCAGAAAGAATCGCCTACCAGAGGAATGACGATGAT  
 GAAGAGGAGGCAGCCCGGAACGGCGCCGAGCCCGACAGGAACGGCTGCGGCAGAAG  
 CAGGAGGAAGAATCCTTGGGACAGGTGACCGACCAGGTGGAGGTGAATGCCCAGAACAGT  
 GTGCCTGACGAGGAGGCCAAGACAACCACCACAAACACTCAAGTGAAGGGGATGATGAG  
 GCCGATTCTGGAGCGCTGGCTCGGCGTGAGGAAAGACGCCAAAAACGCCTTCAGGAG  
 GCTCTGGAGCGGAGAAGGAGTTCGACCCAACAATAACAGATGCAAGTCTGTCGCTCCCA  
 AGCAGAAGAATGCAAAATGACACAGCAGAAAATGAAACTACCGAGAAGGAAGAAAAAAGT  
 GAAAGTCGCCAAGAAAGATACGAGATAGAGGAAACAGAAACAGTCACCAAGTCTACCAG  
 AAGAATGATTGGAGGGATGCTGAAGAAAACAAGAAAGAAGACAAGGAAAAGGAGGAGGAG  
 GAAGAGGAGAAGCCAAAGCGAGGGAGCATTGGAGAAAAATCAGATCAAAGATGAAAAGATT  
 AAAAAGGACAAAGAACCACAAAGAAGAAGTTAAGAGCTTCATGGATCGAAAGAAGGGATTT  
 ACAGAAGTTAAGTCGCAGAATGGAGAATTCATGACCCACAAACTTAAACATACTGAGAAT  
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 CAGGTGGAAGCCCGCAAAAGGCTGGAGGAGCTTCGTGCTGTCGCGGGGAGACCGAGAGC  
 GAAGAGTTCGAGAAGCTCAAACAGAAGCAGCAGGAGGCGGCTTTGGAGCTGGAGGAACTC  
 AAGAAAAAGAGGGAGGAGAGAAGGAAGGTCCTGGAGGAGGAAGAGCAGAGGAGGAAGCAG  
 GAGGAAGCCGATCGAAAACCTCAGAGAGGAGGAAGAGAAGAGGAGGCTAAAGGAAGAGATT  
 GAAAGGCGAAGAGCAGAAGCTGCTGAGAAAACGCCAGAAGATGCCAGAAGATGGCTTGCA  
 GATGACAAGAAACCATTCAAGTGTTCCTCCTAAAGGTTTCACTCTCAAGATAGAAGAG  
 CGAGCAGAATTTTGAATAAGTCTGTGCAGAAAAGCAGTGGTGTCAAATCGACCCATCAA  
 GCAGCAATAGTCTCCAAGATTGACAGCAGACTGGAGCAGTATACCAGTGCATTGAGGGA  
 AAAAAAGCGCAAAACCTACAAAGCCGGCAGCCTCGGATCTTCTGTTCTGCTGAAGGT



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GTACGCAACATCAAGAGTATGTGGGAGAAAGGGAATGTGTTTTTCATCCCCACTGCAGCA  
 GGCACACCAAATAAGGAACTGCTGGCTTGAAGGTAGGGGTTTCTAGCCGCATCAATGAA  
 TGGCTAACTAAAACCCAGATGGAAACAAGTCACCTGCTCCCAAACCTTCTGACTTGAGA  
 CCAGGAGACGTATCCAGCAAGCGGAACCTCTGGGAAAAGCAATCTGTGGATAAGGTCAC  
 TCCCCACTAAGGTTTGGACAGTTCCAGAAAGAACCCAAAGCTCAAGACGCAGGACGAGC  
 TCAGTTGTAGAGGGCTAATTCGCTCTGTTTTGTATTTATGTTGATTTACTAAATTTGGGTT  
 CATTATCTTTTTATTTTTCAATATCCCAGTAAACCCATGTATATTATCACTATATTTAATA  
 ATCACAGTCTAGAGATGTTTCATGGTAAAAGTACTGCCTTTGCACAGGAGCCTGTTTCTAA  
 AGAAACCCATGCTGTGAATAGAGACTTTTCTACTGATCATCATAACTCTGTATCTGAGC  
 AGTGATACCAACCACATCTGAAGTCAACAGAAGATCCAAGTTTAAAATTGCCTGCGGAAT  
 GTGTGCAGTATCTAGAAAAATGAACCGTAGTTTTTGTTTTTTAAATACAGAAGTCATGT  
 TGTCTGCACTTTATAATAAAGCATGGAAGAAATATCTTAGTAGGCAATTGTAACACT  
 TTTTGAAGTAACCCATTTAGATTTGAAATACTGCAATAATGGTTGCTTTAAAAAAA  
 AAAAGAAATGACTGTTAAGGTATTACTTTTTTTCATGCTGATGATTCATATCTAAATT  
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 TTTAGTAGTGATAGTAGCCTGAACCACATTTTAGATAACTCAATTATGTATGTATGTGCA  
 TACACATATACAAACACACTAATGGTAGAATGCTTTTTTATGTGCTAGACTATTATATTT  
 AGTAGTATGTCATTGTAAGTACTAGCCAATATCACAGCTTTTAAAAAATAAAAATCACACT  
 ATATTAATATTTTCATATTTGCCAACAGAAACATGGCAGATAGGTATCAATATGTTTTCAA  
 TGCCTGATGACCTATAAGAAGAAAGTATTGAAAAGAAGAGAGATTAGAAGTGTAGAAAG  
 AGTTGAAATTTTCTAAAAGACATAGTATTTAGTTTATAATTAATGCATTCTTGAAGTCC  
 AGTGTGAAATTTTATAATGCTATCATCTCGACCAAGCTCAAAGCCTACTTATTAGAAACA  
 ATGAAGTTCAACAATAGGTCATAAGGTCTCTTCTTTTCTAAAATGAAAGACAAGAAATT  
 TAGTGCCAATATTGTACAGACAGAAATTCATGTATGAGTCTCAACAAAGACTACCTTTG  
 GCTAAATGCTAGAAAGCAGAGAAGTAAAGTGAGCAAAATCCAGTGTGAGGAGTCATGAC  
 AGTACTTTGATCTTTATACTCTGAAGCATTCTTCAAACCTTTTCTACTTTTATTTGTC  
 ATTGATACCTGTAGTAAGTTGACAATGTGGTGAATTTCAAATTTATATGTAACCTCTAC  
 TAGTTTTACTTTTCCCCAAGTCTTTTTAACTCATGATTTTTACACACACAATCCAGA  
 ACTTATTATATAGCCTCTAAGTCTTTATCTTCACAGTAGATAATGAAAGAGTCTCCAG  
 TGTCTTGGCAAAATGTTCTAGTATAGCTGGATACATACAGTGGAGTTCTATAAACTCATA  
 CCTCAGTGGACTTAACCAAAATTTGTGTTAGTCTCAATTCTACCACACTGAGGGAGCCTC  
 CCAATAACTATTTTCTTATCTGCAAGTATTCCTCCAGAAGAGCTAACCAGGCAGGGCTG  
 GCATGAGAAGTGACATCTGCGTTACAAAGTCTATCTTCTCATAAGTCTGTAAAGAGCAA  
 TTGAATCTTCTAGCTTTAGCAAACCTAAGCCAAAGGAAGGAAAGCCACGAAGAATGCAGA  
 AGTCAAACCTCATGACAAAGTAGGCACAAGTCTACAATAAGCTAAATCAGAATTTACAA  
 ATACAAGTGTCCCAGGTAGCATTGACTCCCGTCATTGGAGTGAATGGATCAAAGTTTGA  
 ATTAAGGCCTATGGTAAGGTAACATTGCTTTGTTGACTTTTGAACAAGAGCTCCTCCTG  
 ATCACTATTACATATTTTCTAGAAAATCTAAAGTTCAGAAGAGAATGTATCACTGCTGA  
 CTTTTATTCCAATATTTGGATGGAGTAAGTTTTAGGGTAGAATTTTGTTCAGTTTGGATT  
 TAATCTTTTGAAGTAAATTCCTTGTACTGGTTTACTGATAAATTTCTGTTATCTTT  
 ACGAGGTAAAAGTCAAGCTGACTAGCATGTTCTGTGAATCTGCCATTCTAAAAATTTT  
 ATAAACACTTGATACTTTTCACTGATAATGGATCGCTCCAATAAACATATATTGTAAAA  
 TGCATCCACAATAAATGGAATTCCTTCTGCAAAAAAAAAAAAAAAAAAAAA

**Restriction Sites:**

Please inquire

**ACCN:**

NM\_004342

<b>OTI Disclaimer:</b>	<p>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 <a href="mailto:custsupport@origene.com">custsupport@origene.com</a> or by calling 301.340.3188 option 3 for pricing and delivery.</p> <p>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></p>
<b>OTI Annotation:</b>	<p>This TrueClone is provided through our Custom Cloning Process that includes sub-cloning into OriGene's pCMV6 vector and full sequencing to provide a non-variant match to the expected reference without frameshifts, and is delivered as lyophilized plasmid DNA.</p>
<b>Components:</b>	<p>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).</p>
<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>	<u><a href="#">NM_004342.5</a>, <a href="#">NP_004333.1</a></u>
<b>RefSeq Size:</b>	4468 bp
<b>RefSeq ORF:</b>	1617 bp
<b>Locus ID:</b>	800
<b>UniProt ID:</b>	<u><a href="#">Q05682</a></u>
<b>Cytogenetics:</b>	7q33
<b>Domains:</b>	Caldesmon
<b>Protein Pathways:</b>	Vascular smooth muscle contraction

**Gene Summary:**

This gene encodes a calmodulin- and actin-binding protein that plays an essential role in the regulation of smooth muscle and nonmuscle contraction. The conserved domain of this protein possesses the binding activities to Ca(2+)-calmodulin, actin, tropomyosin, myosin, and phospholipids. This protein is a potent inhibitor of the actin-tropomyosin activated myosin MgATPase, and serves as a mediating factor for Ca(2+)-dependent inhibition of smooth muscle contraction. Alternative splicing of this gene results in multiple transcript variants encoding distinct isoforms. [provided by RefSeq, Jul 2008]

Transcript Variant: This variant (2) uses an alternate in-frame splice site and lacks an alternate in-frame exon in the central coding region, compared to variant 1. It is mainly expressed in non-muscle tissues or cells. The resulting isoform (2, also known as WI-38 I-CaD II) lacks an internal region, compared to isoform 1.