

## Product datasheet for **SC320917**

### alpha Actinin (ACTN1) (NM\_001102) Human Untagged Clone

#### Product data:

Product Type:	Expression Plasmids
Product Name:	alpha Actinin (ACTN1) (NM_001102) Human Untagged Clone
Tag:	Tag Free
Symbol:	alpha Actinin
Synonyms:	BDPLT15
Mammalian Cell Selection:	Neomycin
Vector:	pCMV6-AC (PS100020)
E. coli Selection:	Ampicillin (100 ug/mL)

**Fully Sequenced ORF:** >OriGene sequence for NM\_001102.2  
 CCCGGCCCCGCCAGCCCAGCCCAGCCCAGCCCTACTCCCTCCCCACGCCAGGGCAGCAGC  
 CGTTGCTCAGAGAGAAGGTGGAGGAAGAAATCCAGACCCTAGCACGCGCCACCATCATG  
 GACCATTATGATTCTCAGCAAACCAACGATTACATGCAGCCAGAAGAGGACTGGGACCGG  
 GACCTGCTCCTGGACCCGGCCTGGGAGAAGCAGCAGAGAAAGACATTACGGCATGGTGT  
 AACTCCCACCTCCGGAAGGCGGGACACAGATCGAGAACATCGAAGAGGACTTCCGGGAT  
 GGCCTGAAGTCTATGCTGCTGCTGGAGGTCATCTCAGGTGAACGCTTGGCCAAGCCAGAG  
 CGAGGCAAGATGAGAGTGCACAAGATCTCCAACGTCAACAAGGCCCTGGATTTTCATAGCC  
 AGCAAAGGCGTCAAACCTGGTGTCCATCGGAGCCGAAGAAATCGTGGATGGGAATGTGAAG  
 ATGACCCTGGGCATGATCTGGACCATCATCCTGCGCTTTGCCATCCAGGACATCTCCGTG  
 GAAGAGACTTCAGCCAAGGAAGGCTGCTCCTGTGGTGTGAGAGAAAGACAGCCCCTTAC  
 AAAAATGTCAACATCCAGAACTTCCACATAAGCTGGAAGGATGGCCTCGGCTTCTGTGCT  
 TTGATCCACCGACACCCGGCCGAGCTGATTGACTACGGGAAGCTGCGGAAGGATGATCCA  
 CTCACAAATCTGAATACGGCTTTTGACGTGGCAGAGAAGTACCTGGACATCCCCAAGATG  
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 GTGTCTAGCTTCTACCACGCTTCTCTGGAGCCCAGAAGGCGGAGACAGCAGCCAATCGC  
 ATCTGCAAGGTGTTGGCCGTCAACCAGGAGAACGAGCAGCTTATGGAAGACTACGAGAAG  
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 CCCGAGAACCACCATGCATGCCATGCAACAGAAGCTGGAGGACTTCCGGGACTACCCGGCGC  
 CTGCACAAGCCGCCAAGGTGCAGGAGAAGTGCCAGCTGGAGATCAACTTCAACACGCTG  
 CAGACCAAGCTGCGGCTCAGCAACCCGGCCTGCCTTCATGCCCTCTGAGGGCAGGATGGTC  
 TCGGACATCAACAATGCCTGGGGCTGCCTGGAGCAGGTGGAGAAGGGCTATGAGGAGTGG  
 TTGCTGAATGAGATCCGGAGGCTGGAGCGACTGGACCACCTGGCAGAGAAGTTCCGGCAG  
 AAGGCCTCCATCCACGAGGCTGGACTGACGGCAAAGAGGCCATGCTGCGACAGAAGGAC  
 TATGAGACCGCCACCCTCTCGGAGATCAAGGCCCTGCTCAAGAAGCATGAGGCCTTCGAG  
 AGTGACCTGGCTGCCACCAGGACCGTGTGGAGCAGATTGCCGCCATCGCACAGGAGCTC  
 AATGAGCTGGACTATTATGACTACCCAGTGTCAACGCCCGTTGCCAAAAGATCTGTGAC



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CAGTGGGACAATCTGGGGGCCCTAACTCAGAAGCGAAGGGAAGCTCTGGAGCGGACCGAG  
 AAAGTCTGGAGACCATTGACCAGCTGTACTTGGAGTATGCCAAGCGGGCTGCACCCCTC  
 AACAACTGGATGGAGGGGGCCATGGAGGACCTGCAGGACACCTTCATTGTGCACACCATT  
 GAGGAGATCCAGGGACTGACCACAGCCCATGAGCAGTTCAAGGCCACCCTCCCTGATGCC  
 GACAAGGAGCGCTGGCCATCCTGGGCATCCACAATGAGGTGTCCAAGATTGTCCAGACC  
 TACCACGTCAATATGGCGGGCACCAACCCTACACAACCATCACGCCTCAGGAGATCAAT  
 GGCAAATGGGACCACGTGCGGCAGCTGGTGCCTCGGAGGGACCAAGCTCTGACGGAGGAG  
 CATGCCCGACAGCAGCAACAATGAGAGGCTACGCAAGCAGTTTGGAGCCCAGGCCAATGTC  
 ATCGGGCCCTGGATCCAGACCAAGATGGAGGAGATCGGGAGGATCTCCATTGAGATGCAT  
 GGGACCCTGGAGGACCAGCTCAGCCACCTGCGGCAGTATGAGAAGAGCATCGTCAACTAC  
 AAGCCAAAGATTGATCAGCTGGAGGGGACCACCAGCTCATCCAGGAGGCGCTCATCTTC  
 GACAACAAGCACACCAACTACACCATGGAGCACATCCGTGTGGGTGGGAGCAGCTGCTC  
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 CACTCCGGCACACTGGGTCCCGAGGAGTCAAAGCCTGCCTCATCAGCTTGGGTTATGAT  
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 AACCGCCTGGGGGTAGTGACATTCCAGGCCTTCATTGACTTCATGTCCCAGGAGACAGCC  
 GACACAGATACAGCAGACCAAGTCATGGCTTCCTTCAAGATCCTGGGTGGGGACAAGAAC  
 TACATTACCATGGACGAGCTGCGCCGCGAGCTGCCACCCGACCAGGCTGAGTACTGCATC  
 GCGCGGATGGCCCCCTACACCGGCCCGGACTCCGTGCCAGGTGCTCTGGACTACATGTCC  
 TTCTCCACGGCGCTGTACGGCGAGGTGACCTCTAATCCACCCCGCCCGCCGCTCGT  
 CTTGTGCGCCGTGCCCTGCCTTGCACCTCCGCCGTGCGCCATCTCCTGGCTGGGTTGCGT  
 TTCAGTCCCAGCCTCCACCCGGGTGAGCTGGGGCCACGTGGCATCGATCCTCCCTGCC  
 CGCGAAGTGACAGTTTACAAAATTATTTTCTGCAAAAAAGAAAAAAGTTACGTTAAAA  
 ACCAAAAAATACATATTTTATTATAGAAAAAGTATTTTTTCTCCACCAGACAAATGGAA  
 AAAAAGAGGAAAGATTAATATTTGCACCGAAATGTCTTGTGTTTGTGCGACATAGGAAA  
 ATAACCAAGCACAAAGTTATATCCATCCTTTTTACTGATTTTTTTTTCTCTATCTGTT  
 CCATCTGTGTATTCAATCTCAATCTCATGTCCATTTTGGTGTGGGAGTCGGGTAGG  
 GGGTACTCTTGTCAAAGGCACATTGGTGCATGTGTGTTGCTAGCTCACTTGTCCATGA  
 AAATATTTTATGATATTAAGAAAAATCTTTTGAIAAAAAAAAAAAAAAAAAAAAAAAAAA

- Restriction Sites:** Please inquire
- ACCN:** NM\_001102
- OTI Disclaimer:** 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).
- OTI Annotation:** 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.
- 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.

**RefSeq:** [NM\\_001102.2](#), [NP\\_001093.1](#)

**RefSeq Size:** 3398 bp

**RefSeq ORF:** 2679 bp

**Locus ID:** 87

**UniProt ID:** [P12814](#)

**Cytogenetics:** 14q22-q24

**Domains:** CH, spectrin, EFh

**Protein Families:** Druggable Genome, ES Cell Differentiation/IPS

**Protein Pathways:** Adherens junction, Arrhythmogenic right ventricular cardiomyopathy (ARVC), Focal adhesion, Leukocyte transendothelial migration, Regulation of actin cytoskeleton, Systemic lupus erythematosus, Tight junction

**Gene Summary:** Alpha actinins belong to the spectrin gene superfamily which represents a diverse group of cytoskeletal proteins, including the alpha and beta spectrins and dystrophins. Alpha actinin is an actin-binding protein with multiple roles in different cell types. In nonmuscle cells, the cytoskeletal isoform is found along microfilament bundles and adherens-type junctions, where it is involved in binding actin to the membrane. In contrast, skeletal, cardiac, and smooth muscle isoforms are localized to the Z-disc and analogous dense bodies, where they help anchor the myofibrillar actin filaments. This gene encodes a nonmuscle, cytoskeletal, alpha actinin isoform and maps to the same site as the structurally similar erythroid beta spectrin gene. Three transcript variants encoding different isoforms have been found for this gene. [provided by RefSeq, Jul 2008]  
Transcript Variant: This variant (2) lacks an alternate in-frame exon compared to variant 1. The resulting isoform (b) has the same N- and C-termini but is shorter compared to isoform a.