

Product datasheet for **RC202873**

alpha Actinin 4 (ACTN4) (NM_004924) Human Tagged ORF Clone

Product data:

Product Type:	Expression Plasmids
Product Name:	alpha Actinin 4 (ACTN4) (NM_004924) Human Tagged ORF Clone
Tag:	Myc-DDK
Symbol:	alpha Actinin 4
Synonyms:	ACTININ-4; FSGS; FSGS1
Mammalian Cell Selection:	Neomycin
Vector:	pCMV6-Entry (PS100001)
E. coli Selection:	Kanamycin (25 ug/mL)



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ORF Nucleotide
Sequence:

>RC202873 ORF sequence
Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC
GCCGCGATCGCC

ATGGTGGACTACCACGGCGCAACCAGTCTGACAGTACGGCCCCAGCAGCGGGCAATGGCGCTGGCG
GCGGGGCGAGCATGGGCGACTACATGGCCAGGAGGACGACTGGGACCGGACCTGCTGCTGGACCCGGC
CTGGGAGAAGCAGCAGCGCAAGACCTTCACGGCATGGTGAACCTCCACCTGCGGAAGGCAGGCACACAG
ATCGAGAACATTGATGAGGACTTCCGAGACGGGCTCAAGCTCATGCTGCTCCTGGAGGTCATATCAGGGG
AGCGGTTACCTAAGCCGGAGCGGGGAAGATGAGAGTGCACAAAATCAACAATGTGAACAAAGCGCTGGA
CTTTATTGCCAGCAAAGGCGTCAAGCTGGTCTCCATCGGGGCAGAAGAGATTGTGGACGGCAACGAAAAG
ATGACCCTGGGAATGATCTGGACCATCATCCTTAGGTTCCGCATCCAGGACATCTCCGTGGAAGAGACCT
CGGCCAAGGAAGGCTCCTTCTCTGGTCCAGAAAAGACAGCCCCGTATAAGAAGCTCAATGTGCAGAA
CTTCCACATCAGCTGGAAGGATGGTCTTGCCCTCAATGCCCTGATCCACCGGCACAGACCAGAGCTGATT
GAGTATGACAAGCTGAGGAAGGACGACCCTGTCAACAACCTGAACAATGCCTTCGAAGTGGCTGAGAAAT
ACCTCGACATCCCCAAGATGCTGGATGCAGAGGACATCGTGAACACGGCCCGGCCGACGAGAAGGCCAT
AATGACCTATGTGTCCAGCTTCTACCATGCCTTTTCAGGAGCGCAGAAGGCTGAAACTGCCGCCAACCGG
ATCTGTAAGGTGCTGGCTGTCAACCAAGAGAACGAGCACCTGATGGAGGACTACGAGAAGCTGGCCAGCG
ACCTCCTGGAGTGGATCCGGCGCACCATCCCCTGGCTGGAGGACCGTGTGCCCAAAAGACTATCCAGGA
GATGCAGCAGAAGCTGGAGGACTTCCGCGACTACCGGCGTGTGCACAAGCCGCCAAGGTGCAGGAGAAG
TGCCAGCTGGAGATCAACTTCAACACGCTGCAGACCAAGCTGCGCCTCAGCAACCGGCCCGCCTTCATGC
CCTCCGAGGGCAAGATGGTCTCGGACATCAACAATGGCTGGCAGCACTTGAGCAGGCTGAGAAGGGCTA
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GAGGAGATTGAGGGCCTGATCTCAGCCATGACCAGTTCAAGTCCACCCTGCCGAGCGCCGATAGGGAGC
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CAGCAACCCCTACACCACCGTCAACCCGCAAAATCATCAACTCAAAGTGGGAGAAGGTGCAGCAGCTGGTG
CCAAAACGGGACCATGCCTCCTGGAGGAGCAGAGCAAGCAGCAGTCAAACGAGCACCTGCGCCGCCAGT
TCGCCAGCCAGGCCAATGTTGTGGGGCCCTGGATCCAGACCAAGATGGAGGAGATCGGGCGCATCTCCAT
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AAGCCCAACCTGGACCTGCTGGAGCAGCAGCACCAGCTCATCCAGGAGGCCCTCATCTTCGACAACAAGC
ACACCAACTATACCATGGAGCACATCCGCGTGGGCTGGGAGCAGCTGCTCACCACCATTGCCCGCACCAT
CAACGAGGTGGAGAACCAGATCCTCACCAGCAGCAGCAAGGGCATCAGCCAGGAGCAGATGCAGGAGTTC
CGGGCGTCTTCAACCCTTCAACAAGGATCATGGCGGGGCGCTGGGGCCGAGGAGTTCGAAGCCCTGCC
TCATCAGCCTGGGCTACGACGTGGAGAACGACCGGAGGGTGGAGCCGAGTTCAACCGCATCATGAGCCT
GGTCGACCCCAACCATAGCGGCCTTGTGACCTTCAAGCCTTCATCGACTTCATGTGCGGGGAGACCACC
GACACGGACACGGCTGACCAGGTCATCGCTTCTTCAAGGTCTTAGCAGGGGACAAGAATTCATCACAG
CTGAGGAGCTGCGGAGAGAGCTGCCCCCGACAGGCGGAGTACTGCATCGCCCGCATGGCGCCATACCA
GGGCCCTGACGCCGTGCCGGTGCCTCGACTACAAGTCTTCTCCACGGCCTTGATGGCGAGAGCGAC
CTG

ACGCGTACGCGGCCGCTCGAGCAGAAACTCATCTCAGAAGAGGATCTGGCAGCAAATGATATCCTGGATT
ACAAGGATGACGACGAT AAGGTTTAA

Protein Sequence: >RC202873 protein sequence
 Red=Cloning site Green=Tags(s)

MVDYHAANQSYQYGPSSAGNGAGGGGSMGDYMAQEDDWRDRLLLDPAWEKQQRKFTTAWCNSHLRKAGTQ
 IENIDEDFRDGLKMLLLEVISGERLPKPERGKMRVHKINNVNKALDFIASKGVKLVSIGAEIIVDGNK
 MTLGMIWTIILRFAIQDISVEETSAKEGLLLWCQRKTAPYKNNVQNFHISWKDGLAFNALIHRHRPELI
 EYDKLRKDDPVTNLNNAFEVAEKYLDIPKMLDAEDIVNTARPDEKAIMTYVSSFYHAFSGAQKAETAANR
 ICKVLAVNQENEHLMEDYEKLASDLEWIRRTIPWLED RVPQKTIQEMQQKLEDFRDYRRVHKPPKVQEK
 CQLEINFNTLQTKLRLSNRPAFMPSEGKMSVSDINNGWQHLEQAEKGEEWLLNEIRRRLERLDHLAEKFRQ
 KASIHEAWTDGKEAMLKHRDYETATLSDIKALIRKHEAFESDLAAHQDRVEQIAAIAQELNELDYDSSH
 VNTRCQKICDQWDALGSLTHSRREALKTEKQLEAIDQLHLEYAKRAAPFNWMSAMEDLQDMFIVHTI
 EEIEGLISAHDQFKSTLPDADREREAIIAIHKEAQRIAESNHIKLSGNSPYTTVTPQIINSKWEKVQQLV
 PKRDHALLEEQSQSNEHLRRQFASQANVVGPIQTKMEEIGRISIEMNGTLEDQLSHLKQYERSIVDY
 KPNLDLLEQQHQLIQEALIFDNKHTNYTMEHIRVGWEQLLTTIARTINEVENQILTRDAKGISQEQMQEF
 RASFNFHFDKDHGGALGPEEFKACLISLGYDVENDRQGEAFNRIMSLVDPNHSGLVTFQAFIDFMSRETT
 DTDADQVIASFVKVLAGDKNFITAELRRELPPDQAEYCIARMAPYQGPDAVPGALDYKSFSTALYGESD
 L

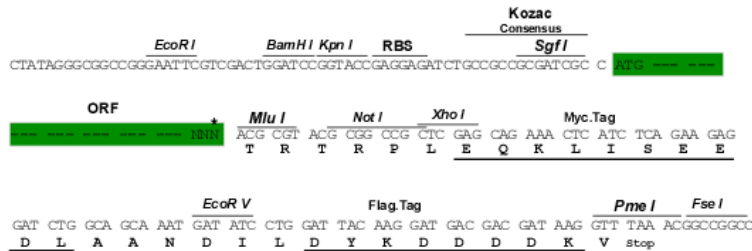
TRTRPLEQKLISEEDLAANDILDYKDDDDKV

Chromatograms: https://cdn.origene.com/chromatograms/mk6291_e05.zip

Restriction Sites: SgfI-MluI

Cloning Scheme:

Cloning sites used for ORF Shuttling:



* The last codon before the Stop codon of the ORF

ACCN: NM_004924

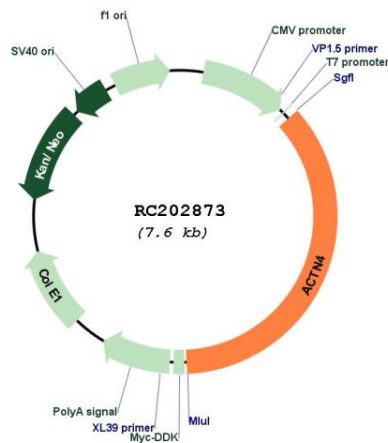
ORF Size: 2733 bp

OTI Disclaimer:	<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 custsupport@origene.com 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. More info</p>
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"> 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_004924.6
RefSeq Size:	3966 bp
RefSeq ORF:	2736 bp
Locus ID:	81
UniProt ID:	O43707
Cytogenetics:	19q13.2
Domains:	CH, spectrin, EFh
Protein Families:	Druggable Genome
Protein Pathways:	Adherens junction, Arrhythmogenic right ventricular cardiomyopathy (ARVC), Focal adhesion, Leukocyte transendothelial migration, Regulation of actin cytoskeleton, Systemic lupus erythematosus, Tight junction
MW:	104.9 kDa

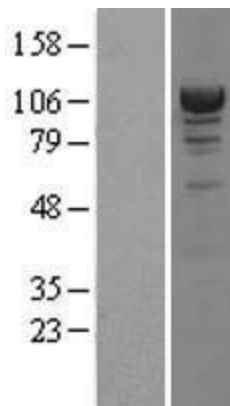
Gene Summary:

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, alpha actinin isoform which is concentrated in the cytoplasm, and thought to be involved in metastatic processes. Mutations in this gene have been associated with focal and segmental glomerulosclerosis. [provided by RefSeq, Jul 2008]

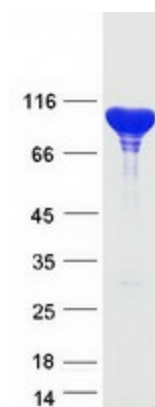
Product images:



Circular map for RC202873



Western blot validation of overexpression lysate (Cat# [LY417652]) using anti-DDK antibody (Cat# [TA50011-100]). Left: Cell lysates from untransfected HEK293T cells; Right: Cell lysates from HEK293T cells transfected with RC202873 using transfection reagent MegaTran 2.0 (Cat# [TT210002]).



Coomassie blue staining of purified ACTN4 protein (Cat# [TP302873]). The protein was produced from HEK293T cells transfected with ACTN4 cDNA clone (Cat# RC202873) using MegaTran 2.0 (Cat# [TT210002]).