

Table S1. *C. elegans* strains used in this study

Strain	Marker	Genotype or feature	Cross	Source
N2	-	wild-type	-	CGC
<i>rsu-1(tm6690)</i>	-	deletion of 778 bp from N-terminal	Outcross 3 times	NBRP
NK358	PAT-3::GFP	<i>qyls43 [pat-3::gfp + ina-1(genomic) + unc-119(+)]</i>	-	CGC
NH2447	egl-15p::GFP	<i>ayls2 [egl-15p::gfp + dpy-20(+)] IV</i>	-	CGC
MT2124	-	<i>let-60(n1046)IV</i>	-	CGC
YC0074	PAT-3::GFP	<i>rsu-1(tm6690);; pat-3::gfp</i>	YC0073 × NK358	
YC0214	<i>Pegl-15::GFP</i>	<i>rsu-1(tm6690);;egl-15p::gfp</i>	YC0073 × NH2447	
YC0292	LifeAct::mKate	<i>mex-5p::LifeAct::mKate::nmy-2UTR, UNC-119+ (x1)</i>	-	
YC0374	mCherry::RSU-1	<i>mCherry::rsu-1</i>	-	
YC0395	mCherry::RSU-1;;PAT-3::GFP	<i>mCherry::rsu-1;; pat-3::gfp</i>	YC0374 × NK358	
YC0415	LifeAct::mKate	<i>egl-15p::LifeAct::mKate::unc-54UTR</i>	-	
YC0421	GFP::UNC-97	<i>gfp::unc-97</i>	-	
YC0438	mCherry::RSU-1;;GFP::UNC-97	<i>mCherry::rsu-1;; gfp::unc-97</i>	YC0374 × YC0421	
YC0459	ATN-1::GFP	<i>egl-15p::atn-1::gfp::unc-54UTR</i>	-	
YC0506	RSU-1 LRR1-7::mCherry	<i>Prsu-1::LRR1-7::unc-54UTR;rsu-1(tm6690)</i>	-	
YC0507	RSU-1 LRR1-4::mCherry	<i>Prsu-1::LRR1-4::unc-54UTR;rsu-1(tm6690)</i>	-	
YC0508	RSU-1 LRR5-7::mCherry	<i>Prsu-1::LRR5-7::unc-54UTR;rsu-1(tm6690)</i>	-	
YC0554	RSU-1 LRR1-5::mCherry	<i>Prsu-1::LRR1-5::unc-54UTR;rsu-1(tm6690)</i>	-	
YC0555	RSU-1 LRR1-6::mCherry	<i>Prsu-1::LRR1-6::unc-54UTR;rsu-1(tm6690)</i>	-	

Table S2. Primers used in this study

Gene	Clone	Forward primer (5'-3')	Reverse primer (5'-3')
<i>rsu-1</i>	C34C12	CTGATATCCGGATTTGGTCAGTCTTC	CAGGTACCGCATTATTTAGGCAGCAC
<i>atn-1</i>	RW#203L	CGGGGTACCTACTCCGCAACCCATACTG	TCCCCGCGG GTCCTGGTCTGATCGTATAGCC
<i>let-60</i>	ZK792	AAGAGGATCGATCACAAGTTTCA	AAATCCTTCTCCACTTCGTTTTTC

Table S3. The gene and clone of several actin bundles protein candidates

Gene	Clone	Forward primer (5'-3')	Reverse primer (5'-3')
<i>plst-1</i>	Y104H12BR	AGATATCTACGACGGCAATCAAA	AAAGATGGAAAAACGGGAAAATA
<i>cyk-1</i>	F11H8	CTTGACCAACGACTCCCAAT	TGGTCCCATGAGAAAGTTCC
<i>fhod-1</i>	C46H11	CTTCTCTGCCAACCGCTTAC	TACATTGGAAACCAGCGACA
<i>viln-1</i>	C10H11	GTCCCCTTTCAGAAAAGATTCAT	TTACCCACATTTTGTAGCACCTC

Table S4. The sequence of mCherry::RSU-1

mCherry::RSU-1
cgccccctctcaacaaatatatgtctctgtgtctttacagggtcatgtactatctcgttggaatccccttgaatgggtattccagctgtgttccctttttccatttttgcctagt tctccgcaattatatttaatagaggattagaaagtgagaaagtgaaaaagatcttgggaattgctatttctcaaattttgtgtcgcgatgcaccatgtcaaagtatgaaaata gtcatatttaacactgattttatcgttatcaactcggaagcaccatttccatccacaaaaaaggatgtaaaaaattaaatttcaggtaaaaATG GTCTCAA AGGGTGAAGAAGATAACATGGCAATTATTAAAGAGTTTATGCGTTTCAAGGTGCATATGGAGGGATCT GTCAATGGGCATGAGTTTGAAATTGAAGGTGAAGGAGAAGGCCGACCATATGAGGGAACACAAACC GCAAACTAAAGGtaagttaaacaatatataactaactaacctgattatttaaatttcagGTA ACTAAAGGCGGACCATTACCATT CGCCTGGGACATCCTCTCTCCACAGTTTCATGTATGGAAGTAAAGCTTATGTTAAACATCCGGCAGATAT ACCAGATTATTTGAAACTTTCATTCCCGGAGGGTTTTAAGTGGAACGCGTAATGAATTTTGAAGACG GAGGAGTTGTTACAGTGACGCAAGACTCAAGGtaagttaaacagttcggtactaactaaccatacatatttaaatttcagCCTCCA AGATGGAGAATTTATTTATAAAGTCAAACCTTCGAGGAACGAATTTCCCCTCGGATGGACCTGTTATGC AGAAGAAGACTATGGGATGGGAAGCTTCAAGTGAAAGAATGTACCCTGAAGACGGTGCTCTTAAGG GAGAGATTAAACAACGTCTTAAATTGAAAGATGGAGGACATTACGATGCTGAGGtaagttaaacaatgattttactaa ctaactaatctgatttaaatttcagGTGAAGACAACCTTACAAAGCCAAAAAACCAGTTTCAGCTGCCAGGAGCGTAC AATGTTAATATTAACTGGATATCACCTCCCACAACGAGGATTACACTATCGTTGAGCAATATGAAAGA GCTGAAGGGCGGCACTCGACAGGTGGCATGGATGAATTGTATAAGCCAAAGGACAAGAAGAAAGAC GAAGTGACAGAAGTTGAACATGTCGATCGGAATATTTTCGTCGTTTTCTCAAATTTACATCTCAgtaagca ttttttgagctctgcgccacattgacgcgcaaatctcaattattccatgggttcgtatgcattagaaattgatctggcggagcagcagctgttgcctgtgctcagctcct ccgcgggaaaatcgtaaatagaatttgcgcgtcaatacgggtcattgggtctgtagatcaaaataaatgtgttgcctcttaggctgaggcttaggttcaggcttgggctt aa

Table S5. The sequence of GFP::UNC-97

GFP::UNC-97
gtcaaccgctgcgcatcctatacctttggcacatttgccctcttccttgaggattttcttcttttctactgtttcacag ccccctcgtataatacctccagtggtttttacgattccttagaatatggaaatttctgtgtttatgcaaaaatttact ttgcatataacaaaatgtagatatgaaattctgactttttgtgctcttttcgattaaccaacatacctaacctata cacactatatgcttttctccggctttcccttggtttgtacataatttgtcttcatattactcgctcgcttttcttttctt ctttcctacccccacctttttccttacaaacccatggctcggttaaaccatcctgtgtgcatagtggccaactttcag tggttcaataatagatgggtgtgtggcggaATGAGTAAAGGAGAAGAACTTTTCACTGGAGTTGTCCCAAT TCTTGTTGAATTAGATGGTGATGTAAATGGGCACAAATTTTCTGTCACTGGAGAGGGTGAAGGTGATG CAACATACGGAAACTTACCCTTAAATTTATTTGCACTACTGGAAACTACCTGTTCCATGGgtaagtttaa catatatatactaactaacctgattatttaaatttcagCCAACACTTGTCACTACTTTCTgTTATGGTGTTCATGCTTcTCgAG ATACCCAGATCATATGAAACgGCATGACTTTTTCAAGAGTGCCATGCCCCAAGGTTATGTACAGGAAA GAACTATATTTTTCAAAGATGACGGGAACTACAAGACACgtaagtttaaacagttcggtactaactaaccatacatatttaaatttc agGTGCTGAAGTCAAGTTTGAAGGTGATACCCCTGTTAATAGAATCGAGTTAAAAGGTATTGATTTTAA AGAAGATGGAAACATTCTTGACACAAATTGGAATACAACATAACTCACACAATGTATACATCATGG CAGACAAACAAAAGAATGGAATCAAAGTTgtaagtttaacatgattttactaactaactaatctgatttaaatttcagAACTTCAAA ATTAGACACAACATTGAAGATGGAAGCGTTCAACTAGCAGACCATTATCAACAAAATACTCCAATTGG CGATGGCCCTGTCCTTTTACCAGACAACCATTACCTGTCCACACAATCTGCCCTTTCGAAAGATCCCA ACGAAAAGAGAGACCACATGGTCCTTCTTGAGTTTGTAAACAGCTGCTGGGATTACACATGGCATGGA TGAACATACAAAATGGATTCCGACCACAATCATATCAACGGGGATCTCGCCCATGGCTTCGAGAACATGGTGT GCGTCCGTTGTAATGATGGTTTTTTCGATGCAAGATCAGATGGTGAACCTTCCGGGCAAGTATGGCATTTCGGAGTG TTTTGTgtaagtttttataagtttagaattaagagaactcaaaaattgcaaaaaaatttttagATGTGCTCAATGCT TTGAGCCATTCCCAGACGGCATCTACTTTGAGTATGAAGGACGAAAGTACTGCGAGCATGACTTCCATGTTCTGTT CTCACCATGTTGTGGAAATGCAGtaagtatctttgagaagacacgcagagccataaatgt