

Table S1: List of CRISPR/Cas9 generated reporters

	Transcriptional reporter TC	Translational reporter TL
<i>egl-1</i>	eGFP	eGFP
<i>ced-9</i>	eGFP	3xHA
<i>ced-4</i>	eGFP	eGFP, mKate2, tdTomato
<i>ced-3</i>	eGFP	eGFP

Table S2: List of strains used in this study

Strain name	Genotype	Notes	Reference
N2	+/+	Wild type	(1)
PHX4530	<i>egl-1(syb4530) V</i>	<i>C. elegans egl-1</i> eGFP transcriptional reporter strain	this study Sunybiotech
TG4550	<i>egl-1(gt3323) V</i>	<i>C. elegans egl-1</i> eGFP transcriptional reporter strain with exon1 and intron1	this study
TG4717	<i>egl-1(gt3399) V</i>	<i>C. elegans egl-1</i> eGFP transcriptional reporter strain without intron1	this study
TG4664	<i>cep-1(lg12501) I; egl-1(gt3323) V</i>	<i>cep-1</i> loss-of-function (2) in the background of <i>egl-1</i> eGFP transcriptional reporter strain	this study
TG4714	<i>brc-1(gt3334) III; egl-1(gt3323) V</i>	<i>brc-1</i> loss of function in the background of <i>egl-1</i> eGFP transcriptional reporter strain	this study
TG5206	<i>syp-2(gt3637) egl-1(gt3323) V / nT1 [unc-?(n754) let-?(m435)] IV; V</i>	<i>syp-2</i> loss of function in the background of <i>egl-1</i> eGFP transcriptional reporter strain, reflects the allele <i>syp-2(ok307)</i> (3)	this study
TG4634	<i>egl-1(gt3361) V</i>	<i>C. elegans egl-1</i> eGFP translational reporter strain insertion after first codon of exon2	this study
PHX5190	<i>ced-9 (syb5190) III; ced-3(n717) IV</i>	<i>C. elegans ced-9</i> eGFP transcriptional reporter strain in <i>ced-3(n717)</i> (4)	this study Sunybiotech
TG4658	<i>ced-9(gt3374) IV</i>	<i>C. elegans</i> 3xHA::linker::ced-9 translational reporter strain	this study
PHX4540	<i>ced-4(syb4540) III</i>	<i>C. elegans ced-4</i> eGFP transcriptional reporter strain	this study Sunybiotech
PHX4536	<i>ced-4(syb4536) III</i>	<i>C. elegans ced-4</i> eGFP translational reporter strain (C-terminal fusion)	this study Sunybiotech
PHX5781	<i>ced-4(syb5781) III</i>	<i>C. elegans ced-4</i> tdTomato translational reporter strain (C-terminal fusion)	this study Sunybiotech
TG4652	<i>ced-4(gt3372) III</i>	<i>C. elegans ced-4</i> mKate2 translational reporter strain (C-terminal fusion)	this study
PHX5182	<i>ced-3(syb5182) IV</i>	<i>C. elegans ced-3</i> eGFP transcriptional reporter strain.	this study Sunybiotech

PHX5180	<i>ced-3(syb5180) IV</i>	<i>C. elegans ced-3</i> eGFP translational reporter strain (C-terminal fusion)	this study Sunybiotech
AH6335	<i>zhIs198 [Plim-7::Δpes-10::mCherry::PH(PLC1delta1)::unc-54 3'UTR] I</i>	Red cell corpse marker	(5)
TG5164	<i>zhIs198 [Plim-7::Δpes-10::mCherry::PH(PLC1delta1)::unc-54 3'UTR] I; egl-1(gt3361) V</i>	<i>C. elegans egl-1</i> eGFP translational reporter strain with <i>zhIs198</i>	this study
RN15	<i>xmSi01[Pmex-5::tomm-20::mcherry::tbb-2 3'UTR; Cbr unc-119(+)] II</i>	Mitochondrial protein reporter	(6)
TG5073	<i>xmSi01[Pmex-5::tomm-20::mcherry::tbb-2 3'UTR; Cbr unc-119(+)] II; egl-1(gt3361) V</i>	<i>C. elegans egl-1</i> eGFP translational reporter strain with <i>xmSi01</i>	this study
TG5210	<i>ltIs37[pie-1p::mcherry::his-58+unc-119(+)] IV; ced-3(syb5180) IV</i>	Histone::mCherry marker (7)	this study

Table S3: crRNA ssODN and primer used for genome editing

Pam-site indicated in []

	Name	Sequence 5'→ 3'	Used to generate the following strains
crRNA	Ce.Cas9.EGL-1.1.AD (Ce0001)	atccgaagagggtgaggcaa[agg]	TG4550, TG4634
	crRNA egl-1 Ex3 (Ce0002)	cgaaaaagtccagaagacga[tgg]	TG4550
	Ce0119	tttcaattcagttgatatgc [tgg]	TG4717
	Ce0120	aaattagtaaggtttgaag [ggg]	TG4717
	Ce0093	attttagATGACACGCTGCA [CGG]	TG4658
	crRNA1_GFP Ce0052	aaaactaagtgttacCTTGGAagg	TG4652
	crRNA2_GFP Ce0053	ATGGACGAGCTCTACAAGGGTGG	TG4652
	crRNA3_mKate2 (lower strand)	actaagtgttacGGAGACgg [cgg]	designed to cut for exchange in mKate 2
	crRNA4_mKate2 (upper strand)	TCCAAGCTCGGACACCGTGG [TGG]	designed to cut for exchange in mKate 2
	crRNA6_tdtomato	tggttacCTTAGAAACCATGG[CGG]	designed to cut for exchange in tdTomato
	crRNA7_tdtomato	GATGAGCTTTACAAGTAAGG	designed to cut for exchange in tdTomato
	syp-2 crRNA L:	AATCGAACGTATCGCAAATA[TGG]	TG5206
	syp-2 crRNA R:	TGCTCATTACGACAAACTTC[TGG]	TG5206
Primer	Ce0009	gatttttgtttttgtttttgtttctgttttagaactgtatccta gtaattgttagacatctccctactatcttccctatataaacc ccctcaaaacctactaatttccagatGCCAAAGA AGAAGCGTAAGGTGAGTACTAGCG GTGGCAGTG	TG4550
	Ce0007	caaatattgaggggagttggagacggagagatcgaaaa ataatcacaaatgaagaaaaaacacgggtattatgagaa atcatggtacaaattggagaaaagttggagatttgcact taGTTCTCGACCTCCTTGCGGAGCTT CTTGCGTTCTCGGAG	TG4550
	Ce0069	gtttttgtttctgttttagaactgtatcctagtaattgttaga catctccctactatcttccctatataaacccttcaaaac cttactaatttccagATGCTCACCTTTTCCAA Ggtaacacttagttttgtgtctctg	TG4634
	Ce0071	CTTCACACGAGGAGAAAGTCCTGAG ACGAGGAGTAGAACATGTTCTTTTC GTTGTAGAAAACGGAAGATTGAAC GTCAAAAACGTTGGACATTGGTAG AAGATCCGAAGAGGTTGAGGCACC	TG4634

		AGTGCCTCCACTACCGCCCGTTCCT CCTGTGCCACC	
	Ce0036	gaggggaatatatacaggcaatattgtacacgataggTT AgCCACCACGGTGTCCGAGCTTGGA TGGG	TG4652
	Ce0020	AGTACTAGCGGTGGCAGTGGAG	TG4652
ssODN	Ce0118	cattcacaccgattagtcgtattctaacttctctttcaattca gttgatATGTTGATGCCAAAGAAGAAG CGTAAGGTGAGTACTAGCGGTGGC AGTGGAGGTACCGGCGG	TG4717
	HA tag with linker Ce0094	gtatattatgattatgaaaacgaataaaaatttagATGT ACCCATACGACGTCCCAGACTACG CCTACCCATATGATGTCCCGGATTA CGCTTACCCATACGATGTTCCAGAT TACGCTGGTGGCACAGGAGGAACG GGCGGTAGTGGAGGCACTGGTACA CGCTGCACGGCGGACAACCTCGCTG ACGAATCCGGCG	TG4658
	syp-2 ok307	CGAAAATGACACAAGATCTGACAAT GGAGCTGGCAAATTCAATCGAACGT AAACTTCTGGATTGTTGAAACGC TCGAGCCGTGGGCTGACAAGTTATA Aatcatctg	TG5206
	brc-1 stop-in- cassette	ACAACCGCCGAGCGCATTCGCCGA GGAGCCTGCAGGGGAAGTTTGTCC AGAGCAGAGGTGACTAAGTGATAA GCTAGCAACCGGTAGAACCGCCAG AACCAGCCACAAAACAA	TG4714

Table S4: Confocal image acquisition settings

Genotype	Laser power (%)			Pinhole	Gain (Master)			‘n’	
	nm				Fluorescence channel			Gy	
	488	561	633			eGFP	tdTomato	mCherry	0
<i>egl-1(gt3323) V</i> - TC	20			38	889			6	9
<i>egl-1(gt3361) V</i> - TL	70			38	889			5	6
<i>ced-4(syb4540) III</i> - TC	25			38	804			6	7
<i>ced-4(syb4536) III</i> - TL	1.50			115.7	867			6	6
<i>ced-3(syb5182) IV</i> - TC	25			38	804			7	6
<i>ced-3(syb5180) IV</i> - TL	60			38	889			9	10
<i>ced-9(syb5190) III</i> ; <i>ced-3(n717) IV</i> - TC	70			38	889			5	5
<i>ced-4(syb5781) III</i> - TL		1.50		38		800		3	3
<i>ced-4(gt3372) III</i> - TL		1.50		38		800		3	3
<i>xmSi01[Pmex-5::tomm-20::mcherry::tbb-2 3’UTR; Cbr unc-119(+)] II</i> ; <i>egl-1(gt3361) V</i>	20		0.2 0	38	889		700	3	5
<i>Itls37[pie-1p::mcherry::his-58+unc-119(+)] IV</i> ; <i>ced-3(syb5180) IV</i>	60		3	38	889		600	6	
<i>brc-1(gt3334);egl-1(gt3323)</i>	20			38	889			3	
<i>syp-2(gt3637) egl-1(gt3323)V</i>	20			38	889			3	

Table S5: Fiji LUT settings

Genotype	LUT color/ Protein	Min-Max	
		0 Gy	90 Gy
<i>egl-1(gt3323) V</i> - TC	Cyan Hot / eGFP	0-150	0-150
<i>egl-1(gt3361) V</i> - TL	Cyan Hot / eGFP	0-110	0-110
<i>ced-4(syb4540) III</i> - TC	Cyan Hot / eGFP	0-100	0-100
<i>ced-4(syb4536) III</i> - TL	Cyan Hot / eGFP	0-100	0-100
<i>ced-3(syb5182) IV</i> - TC	Cyan Hot / eGFP	0-110	0-110
<i>ced-3(syb5180) IV</i> - TL	Cyan Hot / eGFP	0-150	0-150
<i>ced-9(syb5190) III</i> ; <i>ced-3(n717) IV</i> - TC	Cyan Hot / eGFP	0-150	
<i>ced-4(syb5781) III</i> - TL	Cyan Hot / tdTomato	0-150	0-150
<i>ced-4(gt3372) III</i> - TL	Cyan Hot / mKate	0-150 0-25	0-150 0-25
<i>xmSi01[Pmex-5::tomm-20::mcherry::tbb-2 3'UTR; Cbr unc-119(+)] II</i> ; <i>egl-1(gt3361) V</i>	Cyan Hot / eGFP Red Hot / mCherry	0-200 0-200	0-200 0-200
<i>Itls37[pie-1p::mcherry::his-58+unc-119(+)] IV</i> ; <i>ced-3(syb5180) IV</i>	Magenta / eGFP Green / mCherry	0-150 0-150	NA NA
<i>brc-1(gt3334);egl-1(gt3323)</i>	Cyan Hot / eGFP	0-75	0-75
<i>syp-2(gt3637 egl-1(gt3323) V</i>	Cyan Hot / eGFP	0-75	NA

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