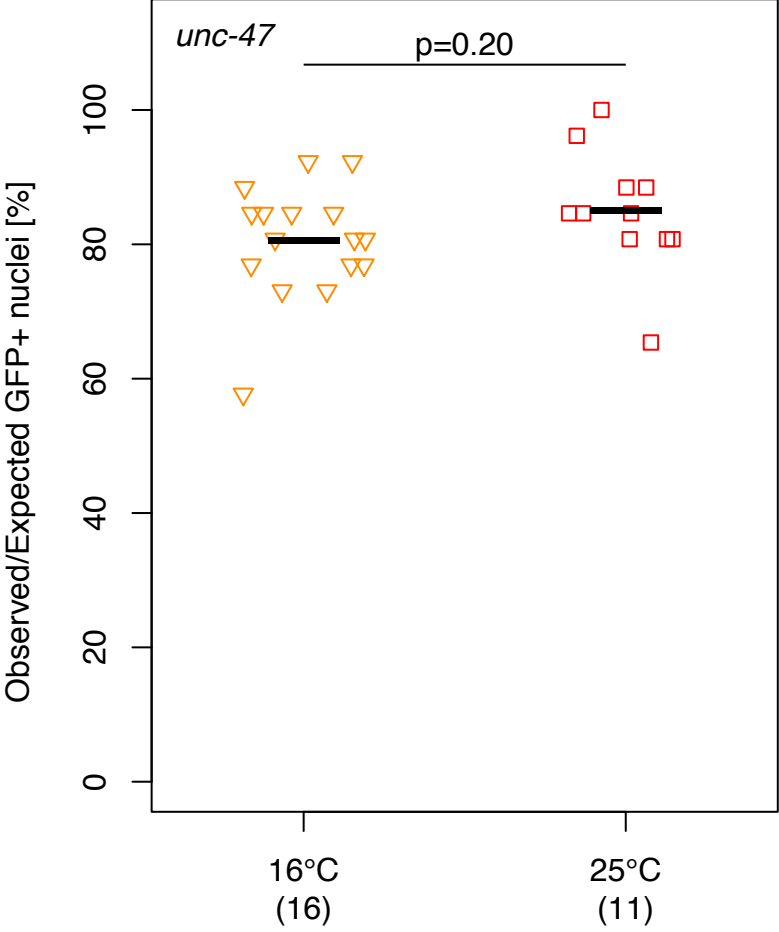
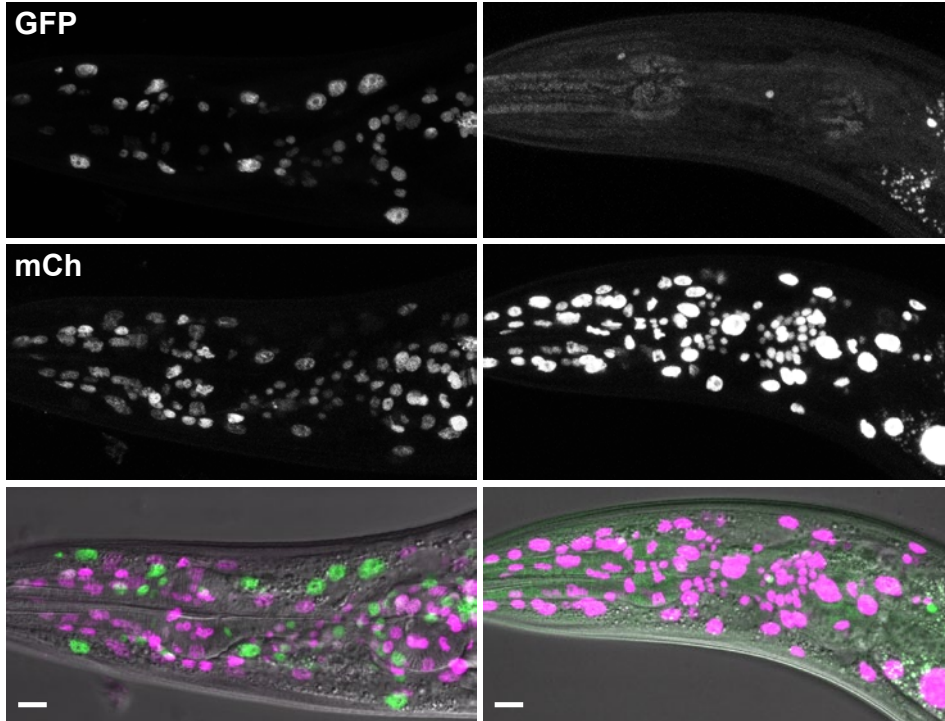


Supplementary Figure 1



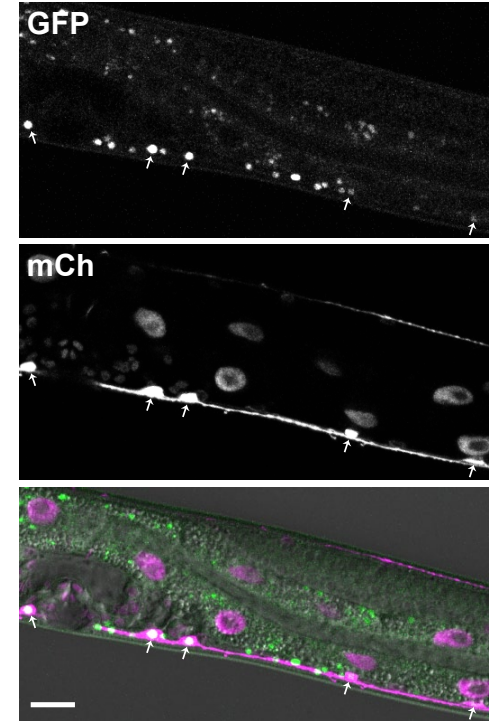
A

$P_{hsp-16.41} > mCh::his-58 > gfp::his-58$; $P_{unc-119}::FLP D5$
 Extrachr array MosSCI



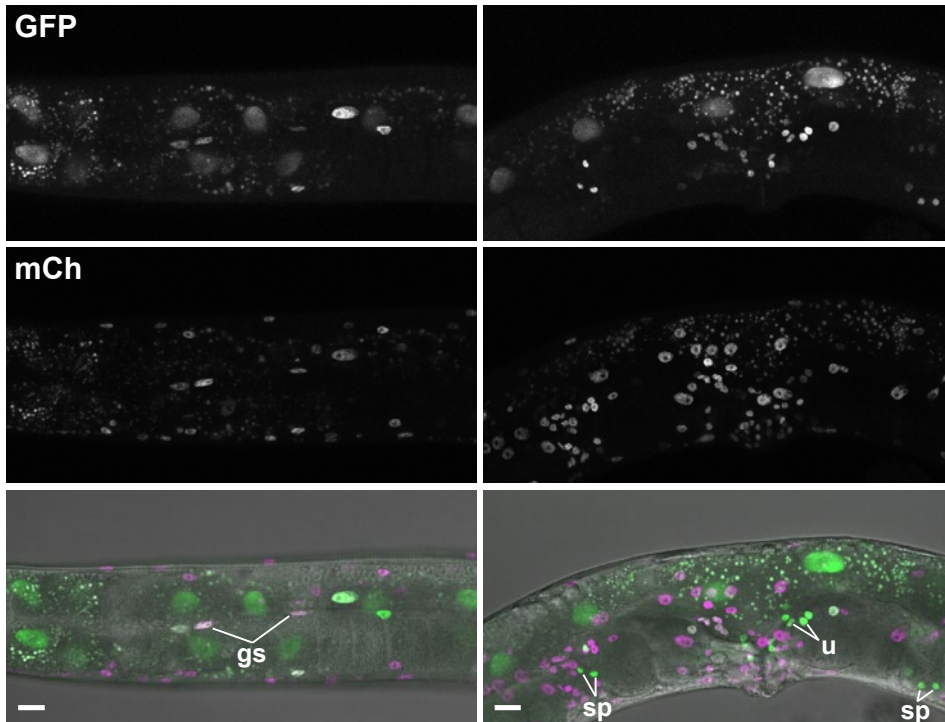
C

$P_{hsp-16.41} > mCh::his-58 > gfp::his-58$; $P_{rgef-1}::FLP D5$; $P_{unc-47}::mCh$



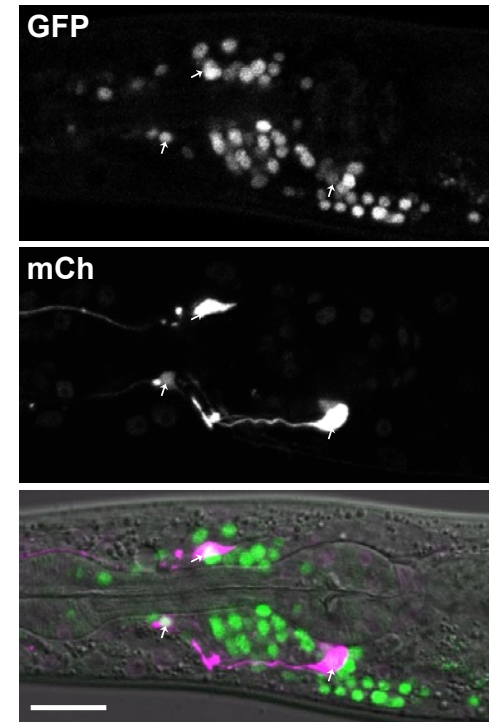
B

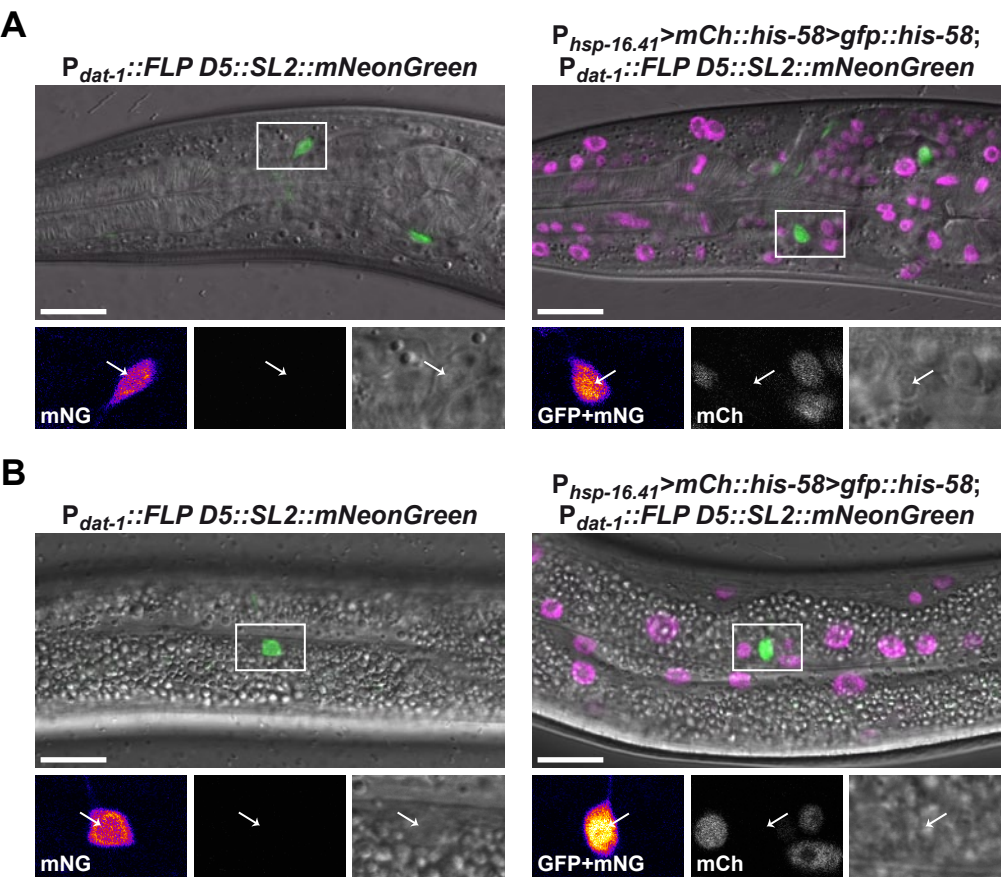
$P_{hsp-16.41} > mCh::his-58 > gfp::his-58$; $P_{elt-2}::FLP D5$

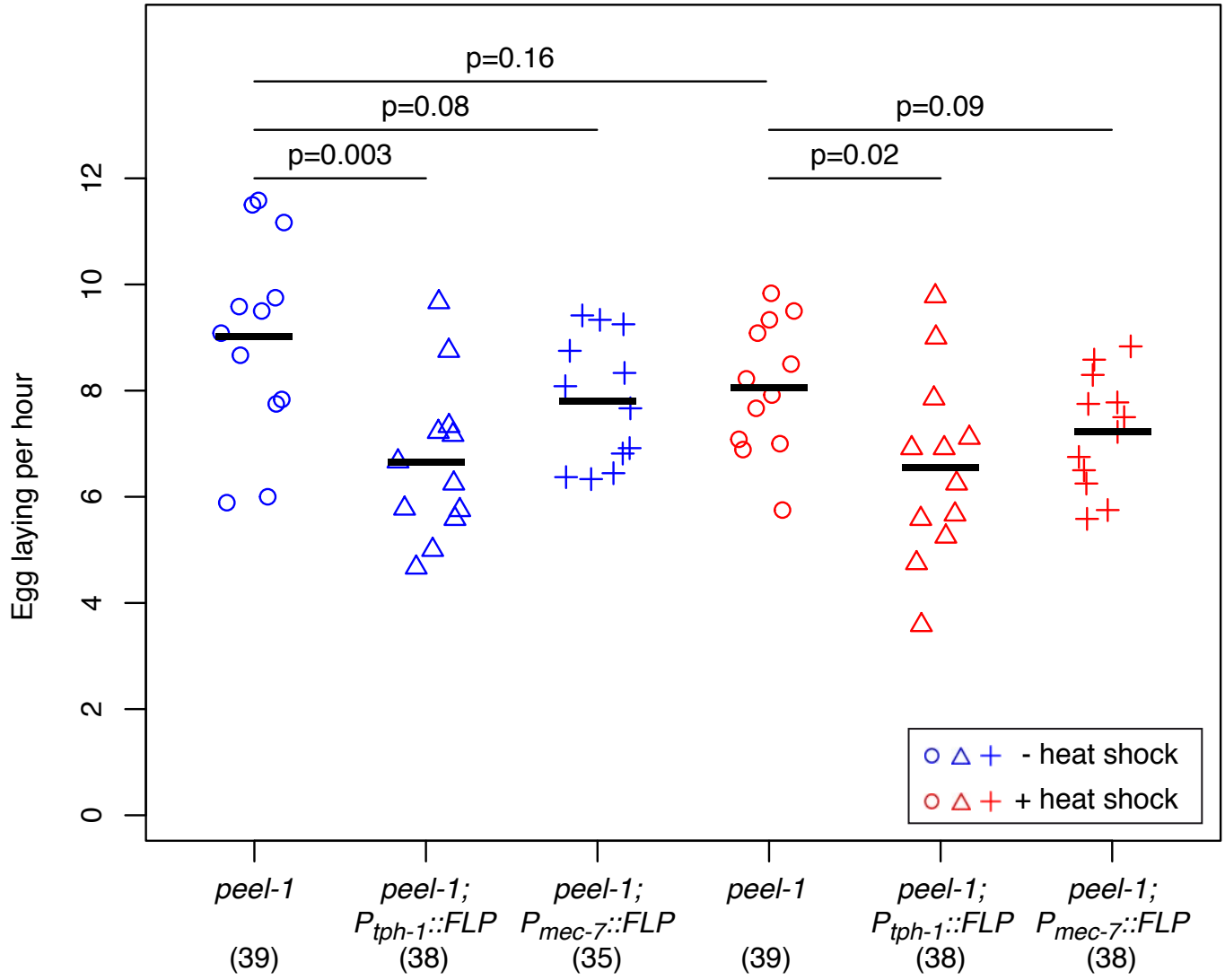


D

$P_{hsp-16.41} > mCh::his-58 > gfp::his-58$; $P_{rgef-1}::FLP D5$; $P_{dat-1}::mCh$







Supplementary Table S1

Primer #	Primer sequence	Primer description
B211	gtcctgtcacactcgtaaaaaac	Forward primer for Phsp-16.41>mCherry 5'half
B220	agtgtagaGTCTCAAAGGGTGAAGAAGAT	Forward primer for mCherry 3'half::his-58
B355	ctctgcaggTACTTGCTGgAAGTGTACTTG	Reverse primer for mCherry 3'half::his-58
B440	gagtctgtcgtcactgtaaca	Reverse primer for Phsp-16.41>mCherry 5'half
B441	cgcgcggtaccAAAAATGCCACAATTTGGTATA	Forward primer for FLP pWD79
B445	GCGCGCGGCCGCGTACAAAAAGCAGGCTT	Forward primer for >mCherry::3'UTRlet-858>gfp cassette
B446	GCGCGCCCGGTTTGTATAGTTCGTCCAT	Reverse primer for >mCherry::3'UTRlet-858>gfp cassette
B551	taccgggGAAAGCCGGTTACCAT	Reverse primer for FLP pWD79
B570	ggtacaaaaATGCCACAATTCGGA	Forward primer for FLP G5
B571	cccgggagacgctTAGATACGA	Reverse primer for FLP G5
B572	CTTGGTCTCGGTGACGAGGCATTGGATGATGACTCCGA	Reverse primer to stitch FLP G5 fragments
B573	TGCCTCGTACCCGAGACCAAGACCTCCGTCTCCCGTAC	Forward primer to stitch FLP G5 fragments
B662	CCAGATATCCTGCAGGTAGC	Forward primer between unc-119 and Phsp16.41; designed for Gibson assembly
B674	ACGCGTgcAGATCTgaGCC	Reverse primer Dam for Gibson assembly
B675	ggtaccgtagaCCGTCGACCTCGAGATGaag	Forward primer Dam for Gibson assembly
B676	GTCGACGGtctaccggtaccGAAGTCC	Reverse primer FRT for Gibson assembly
B826	aggtacaaaaATGCCACAATTCGacATTCTCTGTAAG	Forward primer for FLP D5
B827	ATTCTCTGTAAGACACCACC	Forward primer for Gibson assembly with gBlock
B828	ggatctgcatTTAGATACGACGGTTGATGT	Reverse primer for Gibson assembly with tbb-2 3'UTR
B829	CGTCGTATCTAAatgcaagatcctttcaagca	Forward primer for tbb-2 3' UTR
B830	gagaatgtctagaactaGccccgggtgatccacgatctggaagat	Reverse primer for tbb-2 3' UTR
B871	ACCTCGAGaaaaATGCGCTTTGATTTCCAAAAC	Forward primer for peel-1
B872	gcGCTAGCTCATGGATTTTCAACACTTGG	Reverse primer for peel-1
B961	ttgATGCTTAACAGAAGTCGACA	baf-1 sgRNA; top oligo; for SapTrap vector; cuts at ATG
B962	aacTGTCGACTTCTGTTAAGCAT	baf-1 sgRNA; bottom oligo; for SapTrap vector; cuts at ATG
B963	TGGcgattttcgaataattttcaaatcaagaatgtaattttttgtttt	baf-1 5'HA for SapTrap vector; top oligo; baf-1 promoter
B964	CATggtttctgaaacacaaaataattacattctgaaatttgaataattttc	baf-1 5'HA for SapTrap vector; bottom oligo; baf-1 promoter
B965	acgTCGACTTCTGTTAAGCATCGTGAGTTCGTCGGAGAGC	baf-1 3'HA for SapTrap vector; top oligo; baf-1 ORF
B966	tacGACTTCTTTGTCGCCATTGGCTCCGACGAACTCAC	baf-1 3'HA for SapTrap vector; bottom oligo; baf-1 ORF
B1012	ACATCAACCGTCGTATCTAAcgcgtgctgctcatcctactttca	Forward primer to amplify gpd-2/-3 transsplicing sequence
B1013	TCTTCTCCCTTCGACACCATgatgctggaagcagtttcc	Reverse primer to amplify gpd-2/-3 transsplicing sequence
B1014	ggaaactgctcaacgcatcATGGTGTGGAAGGGAGAAGA	Forward primer to amplify mNeonGreen
B1015	TGAAGGATATGCAGATACATacgcTTACTTGTAGAGTTC	Reverse primer to amplify mNeonGreen
B1064	CATTTTGTCCAGATAAggtaccgGTACAAAAAGCAGGC	Forward primer for >mCherry::his-58...; designed for Gibson assembly
B1065	gagaatgtctagaactaGccccGGAAACAGTTATGTTGGTA	Reverse primer for ...gfp::his-58::3'UTRunc-54; designed for Gibson assembly

Supplementary Table S2

Promoter	Primers (F=forward; R=reverse)	Length [bp Sequence verified]
<i>dat-1</i>	F atgcgggccgcGCTCTATTGAGCAACTTTGGG R ctggtaccGGCTAAAAATTGTTGAGATTC	561 full length
<i>dpy-7</i>	F GAGCCGGCTGTAGCATgcgccgcATCTCATTCCACGATTTCTCGC R gtCGAATTGTGGCATttttgtaccTTATCTGGAACAAAATGTAAG	346 full length
<i>elt-2</i>	F GAGCCGGCTGTAGCATgcgccgcCCTGAGACGGATATACATCGGT R gtCGAATTGTGGCATttttgtaccTCTATAATCTATTTTCTAGTTTCTATTTTA	4344 full length; 3 A nt indels
<i>hlh-8</i>	F GAGCCGGCTGTAGCATgcgccgcCATGATGGTATAGAATGGGAC R gtCGAATTGTGGCATttttgtaccCTGTGAAAATCATATTTGAAATCG	556 full length
<i>hsp-16.41</i>	F atgcgccCGCCAAGCTTGCATGCCTGC R gtcgaattgtggcatttttGGTACCGCCCCCTCGAGGTC	400 full length
<i>lag-2</i>	F atgcgggccgGGCAAAGATTGTGAAGTCCCCT R ttggtaccCTGAAAAAAGGCAAATTTGAAAAG	616 full length
<i>mec-7</i>	F gagccggctgtagcatgcgccgcGTAGTAATCTAGAAATGTAAACCTG R gtcgaattgtggcattttgtaccGTTGCTTGAAATTTGGACCCGA	852 full length
<i>myo-2</i>	F acctgcaggCATTTTATATCTGAGTAGTATCC R tgggtaccTTCTGTGTCTGACGATCGAG	976 full length (T785C)
<i>myo-3</i>	F acctgcaggAGTGATTATAGTCTCTGTTTTT R tgggtaccTTCTAGATGGATCTAGTGGTC	2500 ~1kb from both ends
<i>nhr-82</i>	F gagcggccGCGCTACGGCTCTTTTGAGA R ctggtaccCGTGTAAGATCAGAGGTAGAC	3500 full length
<i>rgef-1</i>	F gagccggctgtagcatGCGGCCGCACACATCGCTGCCGGAATA R gtcgaattgtggcatTTTTGGTACCGTCGTCGTCGATGC	3499 full length; 1 T insertion
<i>tph-1</i>	F gagccggctgtagcatgcgccgcGTAGTAAGCTCCGATGCGTTC R gtcgaattgtggcattttgtaccATGATTGAAGAGCAATGCTAC	377 full length
<i>unc-119</i>	F gactgcaggacggtatcgatAAGCTTCAGT R caggtaccATATGCTGTTGTAGCTTTTAAC	1304 full length
<i>unc-47</i>	F atgcgggccgcCTGCCAATTTGTCCTGTGAA R ctggtaccCTGTAATGAAATAAATGTGACG	1300 ~0.5kb from both ends

Sequence data are available at Addgene for most constructs; others are available from the authors

Supplementary Table S3

Strain	Promoter	FLP	Genotype	Reference
BN305	myo-2	FLP pWD79	bqSi305[pBN155(unc-119(+)) Pmyo-2::FLP_pOG44]] IV	this study
BN307	myo-2	FLP pWD79	bqSi235[pBN103(unc-119(+)) Pemr-1::emr-1::GFP]] II; bqSi305[pBN155(unc-119(+)) Pmyo-2::FLP_pOG44]] IV	this study
BN309	myo-2	FLP pWD79	bqSi294[pBN154(unc-119(+)) Phsp16.41::FRT::mCh::his-58::FRT::gfp::his-58]] II; bqSi305[pBN155(unc-119(+)) Pmyo-2::FLP_pOG44]] IV	this study
BN298	myo-3	FLP pWD79	bqSi294[pBN154(unc-119(+)) Phsp16.41::FRT::mCh::his-58::FRT::gfp::his-58]] II; bqEx298[pBN158(unc-119(+)) Pmyo-3::FLP_pOG44]+pRF4(rol-6(su1006))]	this study
BN299	myo-3	FLP pWD79	bqSi294[pBN154(unc-119(+)) Phsp16.41::FRT::mCh::his-58::FRT::gfp::his-58]] II; bqEx299[pBN158(unc-119(+)) Pmyo-3::FLP_pOG44]+pRF4(rol-6(su1006))]	this study
BN301	myo-3	FLP pWD79	bqSi301[pBN158(unc-119(+)) Pmyo-3::FLP_pOG44]] IV	this study
BN302	myo-3	FLP pWD79	bqSi294[pBN154(unc-119(+)) Phsp16.41::FRT::mCh::his-58::FRT::gfp::his-58]] II; bqSi301[pBN158(unc-119(+)) Pmyo-3::FLP_pOG44]] IV	this study
BN306	myo-3	FLP pWD79	bqSi235[pBN103(unc-119(+)) Pemr-1::emr-1::GFP]] II; bqSi301[pBN158(unc-119(+)) Pmyo-3::FLP_pOG44]] IV	this study
BN308	myo-3	FLP pWD79	bqSi294[pBN154(unc-119(+)) Phsp16.41::FRT::mCh::his-58::FRT::gfp::his-58]] II; bqSi301[pBN158(unc-119(+)) Pmyo-3::FLP_pOG44]] IV	this study
BN329	nhr-82	FLP G5	unc-119(ed3) III; bqSi329[pBN176(unc-119(+)) Pnhr-82::FLP_G5]] IV	this study
BN330	nhr-82	FLP G5	unc-119(ed3) III; bqSi330[pBN176(unc-119(+)) Pnhr-82::FLP_G5]] IV	this study
BN333	nhr-82	FLP G5	bqSi235[pBN103(unc-119(+)) Pemr-1::emr-1::GFP]] II; bqSi329[pBN176(unc-119(+)) Pnhr-82::FLP_G5]] IV	this study

BN334	nhr-82	FLP G5	bqSi235[pBN103(unc-119(+) Pemr-1::emr-1::GFP)] II; bqSi330[pBN176(unc-119(+) Pnhr-82::FLP_G5)] IV	this study
BN335	nhr-82	FLP G5	bqSi294[pBN154(unc-119(+) Phsp16.41::FRT::mCh::his-58::FRT::gfp::his-58)] II; bqSi329[pBN176(unc-119(+) Pnhr-82::FLP_G5)] IV	this study
BN336	nhr-82	FLP G5	bqSi294[pBN154(unc-119(+) Phsp16.41::FRT::mCh::his-58::FRT::gfp::his-58)] II; bqSi330[pBN176(unc-119(+) Pnhr-82::FLP_G5)] IV	this study
BN442	nhr-82	FLP G5	bqSi294[pBN154(unc-119(+) Phsp16.41::FRT::mCh::his-58::FRT::gfp::his-58)] II; bqEx442[pBN176(unc-119(+) Pnhr-82::FLP_G5)+pRF4(rol-6(su1006))]	this study
BN443	nhr-82	FLP G5	bqSi294[pBN154(unc-119(+) Phsp16.41::FRT::mCh::his-58::FRT::gfp::his-58)] II; bqEx443[pBN176(unc-119(+) Pnhr-82::FLP_G5)+pRF4(rol-6(su1006))]	this study
BN444	nhr-82	FLP G5	bqSi294[pBN154(unc-119(+) Phsp16.41::FRT::mCh::his-58::FRT::gfp::his-58)] II; bqEx444[pBN176(unc-119(+) Pnhr-82::FLP_G5)+pRF4(rol-6(su1006))]	this study
BN445	nhr-82	FLP G5	bqSi294[pBN154(unc-119(+) Phsp16.41::FRT::mCh::his-58::FRT::gfp::his-58)] II; bqEx445[pBN176(unc-119(+) Pnhr-82::FLP_G5)+pRF4(rol-6(su1006))]	this study
BN326	unc-119	FLP G5	unc-119(ed3) III; bqSi326[pBN173(unc-119(+) Punc-119::FLP_G5)] IV	this study
BN331	unc-119	FLP G5	bqSi235[pBN103(unc-119(+) Pemr-1::emr-1::GFP)] II; bqSi326[pBN173(unc-119(+) Punc-119::FLP_G5)] IV	this study
BN332	unc-119	FLP G5	bqSi294[pBN154(unc-119(+) Phsp16.41::FRT::mCh::his-58::FRT::gfp::his-58)] II; bqSi326[pBN173(unc-119(+) Punc-119::FLP_G5)] IV	this study
BN441	unc-119	FLP G5	bqSi294[pBN154(unc-119(+) Phsp16.41::FRT::mCh::his-58::FRT::gfp::his-58)] II; bqEx441[pBN173(unc-119(+) Punc-119::FLP_G5)+pRF4(rol-6(su1006))]	this study
BN476	dat-1	FLAG-NLS-FLP D5	unc-119(ed3) III; bqSi476[pBN252(unc-119(+) Pdat-1::FLAG::NLS::FLP_D5)] IV	this study
BN478	dat-1	FLAG-NLS-FLP D5	bqSi235[pBN103(unc-119(+) Pemr-1::emr-1::GFP)] II; bqSi476[pBN252(unc-119(+) Pdat-1::FLAG::NLS::FLP_D5)] IV	this study
BN479	dat-1	FLAG-NLS-FLP D5	bqSi294[pBN154(unc-119(+) Phsp16.41::FRT::mCh::his-58::FRT::gfp::his-58)] II; bqSi476[pBN252(unc-119(+) Pdat-1::FLAG::NLS::FLP_D5)] IV	this study

BN493	dat-1	FLAG-NLS-FLP D5	bqSi493[pBN273(unc-119(+) Pdat-1::FLP_D5_FLAG-NLS)] I; unc-119(ed3) III	this study
BN470	hsp-16.41	FLAG-NLS-FLP D5	unc-119(ed3) III; bqSi470[pBN261(unc-119(+) Phsp16.41::FLAG::NLS::FLP_D5)] IV	this study
BN472	hsp-16.41	FLAG-NLS-FLP D5	bqSi235[pBN103(unc-119(+) Pemr-1::emr-1::GFP)] II; bqSi470[pBN261(unc-119(+) Phsp-16.41::FLAG::NLS::FLP_D5)] IV	this study
BN473	hsp-16.41	FLAG-NLS-FLP D5	bqSi294[pBN154(unc-119(+) Phsp16.41::FRT::mCh::his-58::FRT::gfp::his-58)] II; bqSi470[pBN261(unc-119(+) Phsp-16.41::FLAG::NLS::FLP_D5)] IV	this study
BN646	hsp-16.41	FLAG-NLS-FLP D5	bqSi640[pBN368(unc-119(+) Pdpy-7::FRT::mCh::his-58::FRT::gfp::his-58)] II; bqSi470[pBN261(unc-119(+) Phsp-16.41::FLAG::NLS::FLP_D5)] IV	this study
BN458	nhr-82	FLAG-NLS-FLP D5	unc-119(ed3) III; bqSi458[pBN238(unc-119(+) Pnhr-82::FLAG-NLS-FLP_D5-3'tbb-2)] IV	this study
BN459	nhr-82	FLAG-NLS-FLP D5	unc-119(ed3) III; bqSi459[pBN238(unc-119(+) Pnhr-82::FLAG-NLS-FLP_D5-3'tbb-2)] IV	this study
BN460	nhr-82	FLAG-NLS-FLP D5	bqSi235[pBN103(unc-119(+) Pemr-1::emr-1::GFP)] II; bqSi458[pBN238(unc-119(+) Pnhr-82::FLAG-NLS-FLP_D5-3'tbb-2)] IV	this study
BN461	nhr-82	FLAG-NLS-FLP D5	bqSi235[pBN103(unc-119(+) Pemr-1::emr-1::GFP)] II; bqSi459[pBN238(unc-119(+) Pnhr-82::FLAG-NLS-FLP_D5-3'tbb-2)] IV	this study
BN462	nhr-82	FLAG-NLS-FLP D5	bqSi294[pBN154(unc-119(+) Phsp16.41::FRT::mCh::his-58::FRT::gfp::his-58)] II; bqSi458[pBN238(unc-119(+) Pnhr-82::FLAG-NLS-FLP_D5-3'tbb-2)] IV	this study
BN463	nhr-82	FLAG-NLS-FLP D5	bqSi294[pBN154(unc-119(+) Phsp16.41::FRT::mCh::his-58::FRT::gfp::his-58)] II; bqSi458[pBN238(unc-119(+) Pnhr-82::FLAG-NLS-FLP_D5-3'tbb-2)] IV	this study
BN492	dat-1	FLP D5	unc-119(ed3) III; bqSi492[pBN283(unc-119(+) Pdat-1::FLP_D5)] IV	this study
BN500	dat-1	FLP D5	bqSi294[pBN154(unc-119(+) Phsp16.41::FRT::mCh::his-58::FRT::gfp::his-58)] II; bqSi492[pBN283(unc-119(+) Pdat-1::FLP_D5)] IV	this study
BN614	dat-1	FLP D5::SL2::mNG	unc-119(ed3) III; bqSi614[pBN338(unc-119(+) Pdat-1::FLP_D5::SL2::mNG)] IV	this study

BN615	dat-1	FLP D5::SL2::mNG	unc-119(ed3) III; bqSi615[pBN338(unc-119(+) Pdat-1::FLP_D5::SL2::mNG)] IV	this study
BN616	dat-1	FLP D5::SL2::mNG	bqSi189[pBN13(unc-119(+) Plmn-1::mCherry::his-58)] II; bqSi614[pBN338(unc-119(+) Pdat-1::FLP_D5::SL2::mNG)] IV	this study
BN617	dat-1	FLP D5::SL2::mNG	bqSi294[pBN154(unc-119(+) Phsp16.41::FRT::mCh::his-58::FRT::gfp::his-58)] II; bqSi614[pBN338(unc-119(+) Pdat-1::FLP_D5::SL2::mNG)] IV	this study
BN548	dpy-7	FLP D5	unc-119(ed3) III; bqSi548[pBN266(unc-119(+) Pdpi-7::FLP_D5)] IV	this study
BN549	dpy-7	FLP D5	unc-119(ed3) III; bqSi549[pBN266(unc-119(+) Pdpi-7::FLP_D5)] IV	this study
BN550	dpy-7	FLP D5	bqSi294[pBN154(unc-119(+) Phsp16.41::FRT::mCh::his-58::FRT::gfp::his-58)] II; bqSi548[pBN266(unc-119(+) Pdpi-7::FLP_D5)] IV	this study
BN551	dpy-7	FLP D5	bqSi294[pBN154(unc-119(+) Phsp16.41::FRT::mCh::his-58::FRT::gfp::his-58)] II; bqSi549[pBN266(unc-119(+) Pdpi-7::FLP_D5)] IV	this study
BN508	elt-2	FLP D5	unc-119(ed3) III; bqSi508[pBN282(unc-119(+) Pelt-2::FLP_D5)] IV	this study
BN528	elt-2	FLP D5	bqSi294[pBN154(unc-119(+) Phsp16.41::FRT::mCh::his-58::FRT::gfp::his-58)] II; bqSi508[pBN282(unc-119(+) Pelt-2::FLP_D5)] IV	this study
BN494	hlh-8	FLP D5	unc-119(ed3) III; bqSi494[pBN279(unc-119(+) Phlh-8::FLP_D5)] IV	this study
BN502	hlh-8	FLP D5	bqSi294[pBN154(unc-119(+) Phsp16.41::FRT::mCh::his-58::FRT::gfp::his-58)] II; bqSi494[pBN279(unc-119(+) Phlh-8::FLP_D5)] IV	this study
BN610	hsp-16.41	FLP D5	unc-119(ed3) III; bqSi610[pBN262(unc-119(+) Phsp-16.42::FLP_D5)] IV	this study
BN611	hsp-16.41	FLP D5	unc-119(ed3) III; bqSi611[pBN262(unc-119(+) Phsp-16.42::FLP_D5)] IV	this study
BN612	hsp-16.41	FLP D5	bqSi189[pBN13(unc-119(+) Plmn-1::mCherry::his-58)] II; bqSi610[pBN262(unc-119(+) Phsp-16.42::FLP_D5)] IV	this study

BN613	hsp-16.41	FLP D5	bqSi189[pBN13(unc-119(+) Plmn-1::mCherry::his-58)] II; bqSi611[pBN262(unc-119(+) Phsp-16.42::FLP_D5)] IV	this study
BN555	lag-2	FLP D5	unc-119(ed3) III; bqSi555[pBN310(unc-119(+) Plag-2::FLP_D5)] IV	this study
BN556	lag-2	FLP D5	unc-119(ed3) III; bqSi556[pBN310(unc-119(+) Plag-2::FLP_D5)] IV	this study
BN557	lag-2	FLP D5	bqSi294[pBN154(unc-119(+) Phsp16.41::FRT::mCh::his-58::FRT::gfp::his-58)] II; bqSi555[pBN310(unc-119(+) Plag-2::FLP_D5)] IV	this study
BN487	mec-7	FLP D5	unc-119(ed3) III; bqSi487[pBN278(unc-119(+) Pmec-7::FLP_D5)] IV	this study
BN496	mec-7	FLP D5	bqSi235[pBN103(unc-119(+) Pemr-1::emr-1::GFP)] II; bqSi487[pBN278(unc-119(+) Pmec-7::FLP_D5)] IV	this study
BN498	mec-7	FLP D5	bqSi294[pBN154(unc-119(+) Phsp16.41::FRT::mCh::his-58::FRT::gfp::his-58)] II; bqSi487[pBN278(unc-119(+) Pmec-7::FLP_D5)] IV	this study
BN505	mec-7	FLP D5	bqSi471[pBN255(unc-119(+) Phsp-16.41::FRT::mCh::his-58::FRT::peel-1)] II; bqSi487[pBN278(unc-119(+) Pmec-7::FLP_D5)] IV	this study
BN541	myo-2	FLP D5	unc-119(ed3) III; bqSi541[pBN263(unc-119(+) Pmyo-2::FLP_D5)] IV	this study
BN543	myo-2	FLP D5	bqSi294[pBN154(unc-119(+) Phsp16.41::FRT::mCh::his-58::FRT::gfp::his-58)] II; bqSi541[pBN263(unc-119(+) Pmyo-2::FLP_D5)] IV	this study
BN495	myo-3	FLP D5	unc-119(ed3) III; bqSi495[pBN260(unc-119(+) Pmyo-3::FLP_D5)] IV	this study
BN503	myo-3	FLP D5	bqSi294[pBN154(unc-119(+) Phsp16.41::FRT::mCh::his-58::FRT::gfp::his-58)] II; bqSi495[pBN260(unc-119(+) Pmyo-3::FLP_D5)] IV	this study
BN545	myo-3	FLP D5	bqSi471[pBN255(unc-119(+) Phsp-16.41::FRT::mCh::his-58::FRT::peel-1)] II; bqSi495[pBN260(unc-119(+) Pmyo-3::FLP_D5)] IV	this study
BN453	nhr-82	FLP D5	unc-119(ed3) III; bqSi453[pBN237(unc-119(+) Pnhr-82::FLP_D5)] IV	this study

BN454	nhr-82	FLP D5	bqSi235[pBN103(unc-119(+) Pemr-1::emr-1::GFP)] II; bqSi453[pBN237(unc-119(+) Pnhr-82::FLP_D5)] IV	this study
BN455	nhr-82	FLP D5	bqSi294[pBN154(unc-119(+) Phsp16.41::FRT::mCh::his-58::FRT::gfp::his-58)] II; bqSi453[pBN237(unc-119(+) Pnhr-82::FLP_D5)] IV	this study
BN506	rgef-1	FLP D5	unc-119(ed3) III; bqSi506[pBN267(unc-119(+) Prgef-1::FLP_D5)] IV	this study
BN507	rgef-1	FLP D5	bqSi294[pBN154(unc-119(+) Phsp16.41::FRT::mCh::his-58::FRT::gfp::his-58)] II; bqSi506[pBN267(unc-119(+) Prgef-1::FLP_D5)] IV	this study
BN546	rgef-1	FLP D5	bqSi471[pBN255(unc-119(+) Phsp-16.41::FRT::mCh::his-58::FRT::peel-1)] II; bqSi506[pBN267(unc-119(+) Prgef-1::FLP_D5)] IV	this study
BN604	rgef-1	FLP D5	wpls36[Punc-47::mCherry] I; bqSi294[pBN154(unc-119(+) Phsp16.41::FRT::mCh::his-58::FRT::gfp::his-58)] II; bqSi506[pBN267(unc-119(+) Prgef-1::FLP_D5)] IV	this study
BN623	rgef-1	FLP D5	bqSi294[pBN154(unc-119(+) Phsp16.41::FRT::mCh::his-58::FRT::gfp::his-58)] II; otis181[dat-1::mCherry + ttx-3::mCherry] III; bqSi506[pBN267(unc-119(+) Prgef-1::FLP_D5)] IV	this study
BN488	tph-1	FLP D5	unc-119(ed3) III; bqSi488[pBN280(unc-119(+) Ptp-1::FLP_D5)] IV	this study
BN497	tph-1	FLP D5	bqSi235[pBN103(unc-119(+) Pemr-1::emr-1::GFP)] II; bqSi488[pBN280(unc-119(+) Ptp-1::FLP_D5)] IV	this study
BN499	tph-1	FLP D5	bqSi294[pBN154(unc-119(+) Phsp16.41::FRT::mCh::his-58::FRT::gfp::his-58)] II; bqSi488[pBN280(unc-119(+) Ptp-1::FLP_D5)] IV	this study
BN504	tph-1	FLP D5	bqSi471[pBN255(unc-119(+) Phsp-16.41::FRT::mCh::his-58::FRT::peel-1)] II; bqSi488[pBN280(unc-119(+) Ptp-1::FLP_D5)] IV	this study
BN542	unc-47	FLP D5	unc-119(ed3) III; bqSi542[pBN303(unc-119(+) Punc-47::FLP_D5)] IV	this study
BN544	unc-47	FLP D5	bqSi294[pBN154(unc-119(+) Phsp16.41::FRT::mCh::his-58::FRT::gfp::his-58)] II; bqSi542[pBN303(unc-119(+) Punc-47::FLP_D5)] IV	this study
BN225	Fluorescent marker chr IV		bqSi225[pBN34(unc-119(+) Pemr-1::emr-1::mcherry)] IV	Morales-Martínez et al. 2015

BN243	Fluorescent markers II & IV	bqSi235[pBN103(unc-119(+) Pembr-1::emr-1::GFP)] II; bqSi242[pBN37(unc-119(+) Plem-2::lem-2::mCherry)] IV	González-Aguilera et al. 2014
BN578	Fluorescent markers II & IV	bqSi189[pBN13(unc-119(+) Plmn-1::mCherry::his-58)] II; bqSi577[pBN306(unc-119(+) Pmyo-2::GFP)] IV	this study
BN294	Dual color reporter	bqSi294[pBN154(unc-119(+) Phsp16.41::FRT::mCh::his-58::FRT::gfp::his-58)] II	this study
BN310	Dual color reporter	bqSi294[pBN154(unc-119(+) Phsp16.41::FRT::mCh::his-58::FRT::gfp::his-58)] II; bqSi242[pBN37(unc-119(+) Plem-2::lem-2::mCherry)] IV	this study
BN640	Dual color reporter	bqSi640[pBN368(unc-119(+) Pdpi-7::FRT::mCh::his-58::FRT::gfp::his-58)] II; unc-119(ed3) III	this study
BN471	PEEL-1 parental strain	bqSi471[pBN255(unc-119(+) Phsp-16.41::FRT::mCh::his-58::FRT::peel-1)] II; unc-119(ed9) III	this study
BN477	PEEL-1 parental strain	bqSi471[pBN255(unc-119(+) Phsp-16.41::FRT::mCh::his-58::FRT::peel-1)] II; bqSi225[pBN34(unc-119(+) Pembr-1::emr-1::mcherry)] IV	this study
BN552	G>F>unc-119>P::BAF-1	baf-1(bq7[g>f>unc-119(+)>p::baf-1]) unc-119(ed3) III	this study
BN565	G>F>P::BAF-1	baf-1(bq12[g>f>p::baf-1]) unc-119(ed3) III	this study
BN580	G>F>P::BAF-1	baf-1(bq12[g>f>p::baf-1]) III	this study
BN582	G>F>P::BAF-1; Pelt-2::FLP	baf-1(bq12[g>f>p::baf-1]) unc-119(ed3) III; bqSi508[pBN282(unc-119(+) Pelt-2::FLP_D5)] IV	this study
EG4322	MosSCI host strain	ttTi5605 II; unc-119(ed9) III	Frøkjær-Jensen et al. 2012
EG5003	MosSCI host strain	unc-119(ed3) III; cxTi10882 IV	Frøkjær-Jensen et al. 2012
EG6700	MosSCI host strain	unc-119(ed3) III; cxTi10882 IV; oxEx1579	Frøkjær-Jensen et al. 2012

OH7193	Marker dopaminergic neurons	otIs181[dat-1::mCherry + ttx-3::mCherry] III; him-8(e1489) IV	Flames and Hobert. 2009
XE1375	Marker GABAergic neurons	wpls36[Punc-47::mCherry] I; wpSi1 II; eri-1(mg366) IV; rde-1(ne219) V; lin-15B(n744) X	Firnhaber and Hammarlund. 2013

Note that crossed FLP strains may still carry unc-119(ed3) or unc-119(ed9) III.

Firnhaber, C., and M. Hammarlund, 2013

Neuron-Specific Feeding RNAi in *C. elegans* and Its Use in a Screen for Essential Genes Required for GABA Neuron Function. *PLoS Genet* 9: e1003921.

Flames, N., and O. Hobert, 2009

Gene regulatory logic of dopamine neuron differentiation. *Nature* 458: 885-889.

Frokjaer-Jensen, C., M. W. Davis, M. Ailion and E. M. Jorgensen, 2012

Improved Mos1-mediated transgenesis in *C. elegans*. *Nat Methods* 9: 117-118.

Gonzalez-Aguilera, C., K. Ikegami, C. Ayuso, A. de Luis, M. Iniguez et al., 2014

Genome-wide analysis links emerin to neuromuscular junction activity in *Caenorhabditis elegans*. *Genome Biol* 15: R21.

Morales-Martinez, A., A. Dobrzynska and P. Askjaer, 2015

Inner nuclear membrane protein LEM-2 is required for correct nuclear separation and morphology in *C. elegans*. *J Cell Sci* 128: 1090-1096.

Supporting Information

FLP sequences

FLP pWD79 with *glh-2* 3'UTR

ggtaccaaaaATGCCACAATTTGGTATATTATGTAAAACACCACCTAAGGTGCTTGTT
CGTCAGTTTGTGGAAAGGTTTGAAGACCTTCAGGTGAGAAAATAGCATTATGT
GCTGCTGAACTAACCTATTTATGTTGGATGATTACACATAACGGAACAGCAATCA
AGAGAGCCACATTCATGAGCTATAATACTATCATAAGCAATTCGCTGAGTTTCGA
TATTGTCAATAAATCACTCCAGTTTAAATACAAGACGCAAAAAGCAACAATTCTG
GAAGCCTCATTAAAGAAATTGATTCCTGCTTGGGAATTTACAATTATTCCTTACTA
TGGACAAAACATCAATCTGATgtaagtttaacatatataactaactaaccctgattatttaattttcagA
TCACTGATATTGTAAGTAGTTTGCAATTACAGTTCGAATCATCGGAAGAAGCAGA
TAAGGGAAATAGCCACAGTAAAAAATGCTTAAAGCACTTCTAAGTGAGGGTGA
AAGCATCTGGGAGATCACTGAGAAAATACTAAATTCGTTTGAGTATACTTCGAGA
TTTACAAAACAAAACTTTATACCAATTCCTCTTCCTAGCTACTTTTCATCAATTG
TGGAAGATTCAGCGATATTAAGAACGTTGATCCGAAATCATTTAAATTAGTCCAA
AATAAGTATCTGGGAGTAATAATCCAGTGTTTAGTGACAGAGACAAAGACAAGC
GTTAGTAGGCACATATACTTCTTTAGCGCAAGGGGTAGGATCGATCCACTTGTA
TATTTGGATGAATTTTTGAGGAATTCTGAACCAGTCCTAAAACGAGTAAATAGGA
CCGGCAATTCTTCAAGCAACAAGCAGGAATACCAATTATTAAGATAACTTAGT
CAGATCGTACAACAAAGCTTTGAAGAAAAATGCGCCTTATTCAATCTTTGCTATA
AAAAATGGCCCAAATCTCACATTGGAAGACATTTGATGACCTCATTTCTTTCAA
TGAAGGGCCTAACGGAGTTGACTAATGTTGTGGGAAATTGGAGCGATAAGCGT
GCTTCTGCCGTGGCCAGGACAACGTATACTCATCAGATAACAGCAATACCTGAT
CACTACTTCGCACTAGTTTCTCGGTACTATGCATATGATCCAATATCAAAGGAAA
TGATAGCATTGAAGGATGAGACTAATCCAATTGAGGAGTGGCAGCATATAGAAC
AGCTAAAGGGTAGTGCTGAAGGAAGCATACGATACCCCGCATGGAATGGGATA
ATATCACAGGAGGTACTAGACTACCTTTTCATCCTACATAAATAGACGCATATAAgt
acgcatttaagcataaacacgctagcATGTATCTGCATATCCTTCAAATGttgtccatattgtatcagta
aattataatgcccccttttatatattctccttatcatgaaatgttctattgatttttgctggtgtaaacgttttatagtaaacc
tctccacagtgaatttgtaattgtatcaaaacaagacattgattaaattgttcgagactgtggattgtaaaatatttgc
agaaaatggcaatattcatttagaaacattactccataataggaaaaactatttatgagtttcatgtgcctatgcaagttc
ccactctgtgtgaatttcatatacaaaattgagcaaacataaggtttatgtccagtatgggttctcagatgtttgtaagagtt
gagctgtcgggtaatgccttctcacattgagcacatggatcgggtctctccagtggtgttctgaaataatgaaaaata
gtcttgcaatatgttctactattcgagaaaaaatgtaattttttcttatggttaacc

FLP G5 with *glh-2* 3'UTR (codon optimized)

ggtaccaaaaATGCCACAATTCGGAATTCTCTGTAAGACACCACCAAAGTCCTCGT
CCGTCAATTCGTCGAGCGTTTCGAGCGTCCATCCGGAGAGAAGATCGCCCTCT
GCGCCGCGGAGCTCACCTACCTCTGCTGGATGATCACCCACAACGGAACCGCC
ATCAAGCGTGCCACCTTCATGTCCTACAACACCATCATCTCCAACCTCCTCTCCT
TCGACATCGTCAACAAGTCCCTCCAATTCAAGTACAAGACCCAAAAGGCCACCA
TCCTCGAGGCCTCCCTCAAGgtaagtttaacatatataactaactaaccctgattatttaattttcagA
AGCTCATCCCAGCCTGGGAGTTCACCATCATCCCATACTACGGACAAAAGCACC
AATCCGACATCACCGACATCGTCTCCTCCCTCCAACCTCCAATTCGAGTCCTCCG
AGGAGGCCGACAAGGGAAACTCCCACTCCAAGAAGATGCTCAAGGCCCTCCTC
TCCGAGGGAGAGTCCATCTGGGAGATCACCGAGAAGATCCTCAACTCCTTCGA
GTACACCTCCCGTTTACCAAGACCAAGACCCTCTACCAATTCCTCTTCCTCGC
CACCTTCATCAACTGCGGACGTTTCTCCGACATCAAGAACGTCGACCCAAAGTC

CTTCAAGCTCGTCCAAAACAAGTACCTCGGAGTCATCATCCAATGCCTCGTCAC
CGAGACCAAGACCTCCGTCTCCCGTCACATCTACTTCTTCTCCGCCCGTGGACG
TATCGACCCACTCGTCTACCTCGACGAGTTCTCCGTA ACTCCGAGCCAGTCCT
CAAGCGTGTCAACCGTACCGGAAACTCCTCCTCCAACAAGCAAGAGTACCAACT
CCTCAAGGACAACCTCGTCCGTTCTACAACAAGGCCCTCAAGAAGAACGCC
CATACTCCATCTTCGCCATCAAGAACGGACCAAAGTCCCACATCGGACGTCACC
TCATGACCTCCTTCTCTCCATGAAGgtaagtttaaacatgatttactaactaactaatctgattaaat
tttcagGGACTCACCAGCTCACCAACGTCGTCGGAAACTGGTCCGACAAGCGTG
CCTCCGCCGTGCGCCGTACCACCTACACCCACCAAATCACCGCCATCCCAGAC
CACTACTTCGCCCTCGTCTCCCGTTACTACGCCTACGACCCAATCTCCAAGGAG
ATGATCGCCCTCAAGGACGAGACCAACCCAATCGAGGAGTGGCAACACATCGA
GCAACTCAAGGGATCCGCCGAGGGATCCATCCGTTACCCAGCCTGGAACGGAA
TCATCTCCCAAGAGGTCCTCGACTACCTCTCCTCTACATCAACCGTCGTATCTA
Aacgcgatgtatctgcatatcctcaaatggtgccaatattgtatcagtaaattataatgcccccttttatattctccttatcat
gtaaattgtctattgatttttgctggtgtaaaacgttttatagtaaactctccacagtgaatttgtaaattgtatcaaaaca
agacattgattaaattgttcgagactgtggattgtaaaatattttgcagaaaatggcaatattcatttagaaacattacttc
cataataggaaaaactattatgagtttcatgtgcctatgcaagttccactctgtgtaattcatcatacaaatgagca
aacataaggtttatgtccagatgggttctcagatgtttgtaagagttgagctgctggatgaatgccttctcacttgagcac
atggatcggctctctccagtggtgttctgaaataatgaaaaatagcttgcaatattgttctactattcgagaaaaaatg
taattttttcttatgtaacc

FLP D5 with *gfh-2* 3'UTR (codon optimized)

ggtaccaaaaATGCCACAATTTCGACATTCTCTGTAAGACACCACCAAAGTCCTCGT
CCGTCAATTTCGTTCGAGCGTTTCGAGCGTCCATCCGGAGAGAAGATCGCCCTCT
GCGCCGCCGAGCTCACCTACCTCTGCTGGATGATCACCCACAACGGAACCGCC
ATCAAGCGTGCCACCTTCATGTCCTACAACACCATCATCTCCAACTCCCTCTCCT
TCGACATCGTCAACAAGTCCCTCCAATTCAAGTACAAGACCCAAAAGGCCACCA
TCCTCGAGGCCTCCCTCAAGgtaagtttaaacatataataactaactaaccctgattattaaattttcagA
AGCTCATCCCAGCCTGGGAGTTCACCATCATCCCATACTACGGACAAAAGCACC
AATCCGACATCACCGACATCGTCTCCTCCCTCCAACTCCAATTCGAGTCCTCCG
AGGAGGCCGACAAGGGAAACTCCCACTCCAAGAAGATGCTCAAGGCCCTCCTC
TCGGAGGGAGAGTCCATCTGGGAGATCACCGAGAAGATCCTCAACTCCTTCGA
GTACACCTCCCGTTTTACCAAGACCAAGACCCTCTACCAATTCCTCTTCCTCGC
CACCTTCATCAACTGCGGACGTTTCTCCGACATCAAGAACGTTCGACCCAAAGTC
CTTCAAGCTCGTCCAAAACAAGTACCTCGGAGTCATCATCCAATGCCTCGTCAC
CGAGACCAAGACCTCCGTCTCCCGTCACATCTACTTCTTCTCCGCCCGTGGACG
TATCGACCCACTCGTCTACCTCGACGAGTTCTCCGTA ACTCCGAGCCAGTCCT
CAAGCGTGTCAACCGTACCGGAAACTCCTCCTCCAACAAGCAAGAGTACCAACT
CCTCAAGGACAACCTCGTCCGTTCTACAACAAGGCCCTCAAGAAGAACGCC
CATACTCCATCTTCGCCATCAAGAACGGACCAAAGTCCCACATCGGACGTCACC
TCATGACCTCCTTCTCTCCATGAAGgtaagtttaaacatgatttactaactaactaatctgattaaat
tttcagGGACTCACCAGCTCACCAACGTCGTCGGAAACTGGTCCGACAAGCGTG
CCTCCGCCGTGCGCCGTACCACCTACACCCACCAAATCACCGCCATCCCAGAC
CACTACTTCGCCCTCGTCTCCCGTTACTACGCCTACGACCCAATCTCCAAGGAG
ATGATCGCCCTCAAGGACGAGACCAACCCAATCGAGGAGTGGCAACACATCGA
GCAACTCAAGGGATCCGCCGAGGGATCCATCCGTTACCCAGCCTGGAACGGAA
TCATCTCCCAAGAGGTCCTCGACTACCTCTCCTCTACATCAACCGTCGTATCTA
Aacgcgatgtatctgcatatcctcaaatggtgccaatattgtatcagtaaattataatgcccccttttatattctccttatcat
gtaaattgtctattgatttttgctggtgtaaaacgttttatagtaaactctccacagtgaatttgtaaattgtatcaaaaca
agacattgattaaattgttcgagactgtggattgtaaaatattttgcagaaaatggcaatattcatttagaaacattacttc

cataataggaaaaactatztatgagttttcatgtgcctatgcaagttcccactctgtgtgaatttcatcatacaaattgagca
aacataaggtttatgtccagatggttctcagatgtttgtaagagttgagctgtcggtgaatgccttctcacattgagcac
atggatcggctctctccagtggtgtctgaaataatgaaaaatagcttgcfaatatgtttctactattcgagaaaaaatg
taattttttcttatggaacc

FLAG-NLS-FLP D5 with *tbb-2* 3'UTR (codon optimized)

ggtaccaaaaATGGCTAGC**GACTACAAGGACCACGACGGAGACTACAAGGACCAC**
GACATCGACTACAAGGACGACGACGACAAGGCTAGC**ATGTCCCGTCGTCGTAA**
GGCCAACCCAACCAAGCTCTCCGAGAACGCCAAGAAGCTCGCCAAGGAGGTCC
AGAACggatccATGCCACAATT**CGAC**ATTCTCTGTAAGACACCACCAAAAGTCCTC
GTCCGTCAATTCGTTCGAGCGTTTCGAGCGTCCATCCGGAGAGAAGATCGCCCT
CTGCGCCGCCGAGCTCACCTACCTCTGCTGGATGATCACCCACAACGGAACCG
CCATCAAGCGTGCCACCTTCATGTCCTACAACACCATCATCTCCAACCTCCCTCT
CCTTCGACATCGTCAACAAGTCCCTCCAATTCAAGTACAAGACCCAAAAGGCCA
CCATCCTCGAGGCCTCCCTCAAGGtaagtttaaacatatataactaactaaccctgattatttaatttc
agAAGCTCATCCCAGCCTGGGAGTTCACCATCATCCCATACTACGGACAAAAGC
ACCAATCCGACATCACCGACATCGTCTCCTCCCTCCAACCTCCAATTGAGTCCT
CCGAGGAGGCCGACAAGGGAAACTCCCCTCCAAGAAGATGCTCAAGGCCCTC
CTCTCCGAGGGAGAGTCCATCTGGGAGATCACCGAGAAGATCCTCAACTCCTT
CGAGTACACCTCCCGTTTCACCAAGACCAAGACCCCTTACCAATTCCTCTTCTCCT
CGCCACCTTCATCAACTGCGGACGTTTCTCCGACATCAAGAACGTGCACCCAAA
GTCCTTCAAGCTCGTCCAAAACAAGTACCTCGGAGTCATCATCCAATGCCTCGT
CACCGAGACCAAGACCTCCGTCTCCCGTCACATCTACTTCTTCTCCGCCCGTGG
ACGTATCGACCCACTCGTCTACCTCGACGAGTTCCTCCGTAACCTCCGAGCCAGT
CCTCAAGCGTGTCAACCGTACCGGAAACTCCTCCTCCAACAAGCAAGAGTACCA
ACTCCTCAAGGACAACCTCGTCCGTTCTTACAACAAGGCCCTCAAGAAGAACGC
CCATACTCCATCTTCGCCATCAAGAACGGACCAAAAGTCCCACATCGGACGTCA
CCTCATGACCTCCTTCTCCTCATGAAGGtaagtttaaacatgattttactaactaactaatctgattta
aatttcagGGACTCACCGAGCTCACCAACGTCTGCGGAAACTGGTCCGACAAGCG
TGCTCCGCCGTGCCCCGTACCACCTACACCCACCAATCACCGCCATCCCAG
ACCACTACTTCGCCCTCGTCTCCCGTTACTACGCCTACGACCCAATCTCCAAGG
AGATGATCGCCCTCAAGGACGAGACCAACCCAATCGAGGAGTGGCAACACATC
GAGCAACTCAAGGGATCCGCCGAGGGATCCATCCGTTACCCAGCCTGGAACGG
AATCATCTCCAAGAGGTCTCTGACTACCTCTCCTCCTACATCAACCGTCGTAT
CTAAatgcaagatcctttcaagcattcccttctctatcactcttctttttgtcaaaaaattctctcgctaatttattgct
ttttaatgtatttttatgacttttatagtcactgaaaagttgcatctgagtgaaagtgaatgctatcaaaatgtgattctgtc
tgatgtactttcacaatctctctcaattccatttgaagtgccttaaacccgaaagggtgagaaaaatgagagcgctcaa
tattgtattgttgcgtgagtgaccaacaaaaagaggaaactttattgtgcccgaagaaaaagtctcattgcctaa
gagaaacatatgtggttggaatctccagatcgtggatca

Underlined sequences correspond to introns.

Bold nucleotides highlighted in green correspond to changes to encode an aspartic acid residue at position 5.

Nucleotides highlighted in yellow correspond to 3xFLAG tag.

Nucleotides highlighted in light blue correspond to *egl-13* NLS tag.