

Supplemental Table 1: List of strains and alleles

Strain Name	Genotype
HR1157	<i>let-502(sb118ts) I</i>
HR1440	<i>pak-1(ok448) X</i>
HR1500	<i>let-502(sb118ts) I; pak-1(ok448) X</i>
HR604	<i>mel-11(it26ts) unc-4(e120)/mC1 II</i>
HR1237	<i>let-502(sb118ts) I; mel-11(it26ts) unc-4(e120) II</i>
XA8001	<i>fhod-1(tm2363) I</i>
HR1485	<i>let-502(sb118ts) fhod-1(tm2363) I</i>
HR1237	<i>let-502(sb118ts) I; mel-11(it26ts) unc-4(e120) II</i>
HR1637	<i>let-502(sb118ts) unc-57(ad592) rga-2(hd102) I</i>
HR1655	<i>rga-2(hd102) I</i>
HR1214	<i>rhgf-2(sb100) II</i>
HR1641	<i>rga-2(hd102) I; rhgf-2(gk216) II</i>
HR1888	<i>rga-1(hd102) I; rhgf-2(gk216) III; pak-1(ok448) X</i>
HR1891	<i>pix-1(ok982) X</i>

Supplemental Table 2: List of primers

Primer	Sequence	Use
oED1	<u>tgccggccgc</u> ATGGAGCAGGATGAGCTGC	<i>let-502</i> cDNA forward
oED2	<u>ggggatcgat</u> TTGATAGATTGTGGAAGAGTTTG	<i>let-502</i> cDNA reverse
oED37	TGCAACACTTTGCTGATAGGC	<i>let-502</i> fragment 1 cDNA reverse
oED36	CCAAAGAGTACAATAGTGAGATGG	<i>let-502</i> fragment 2 cDNA forward
oED3	<u>accgcg</u> GGCGAACAAATAAAGAGAAAGG	<i>let-502</i> promoter forward
oED4	<u>agcggccgc</u> GGCTGCAGCTCGATTTTC	<i>let-502</i> promoter reverse
oED41	<u>ggcggccgc</u> ATGGGTCAAGATGACGAGG	<i>mel-11</i> cDNA forward
oED6	<u>ggctgcag</u> GATGGTCATCTTCGATATGAC	<i>mel-11</i> cDNA reverse
oED7	<u>ggcggccgc</u> GCTCCATCTATACACTTCTCTCC	<i>mel-11</i> promoter forward
oED8	<u>ggggatcc</u> TCTGCAAAATATGAAATTTTTTTAG	<i>mel-11</i> promoter reverse
oED9	<u>ggcggccgc</u> ATGAAAGCTTTCTCATCGTATG	<i>pak-1</i> cDNA f
oED10	<u>ggctgcag</u> TGAGTTGCTAGCTTCGGC	<i>pak-1</i> cDNA reverse
oED11	<u>gccgcgg</u> CAACATGAACGGGAGTATCAC	<i>pak-1</i> promoter forward
oED12	<u>ggcggccgc</u> TTTGGCAAGCCTGGAAAATTG	<i>pak-1</i> promoter reverse
oED13	<u>gccgcgg</u> CGTTAAATGCTCCAATAAAGTTT	<i>elt-3</i> (<i>SacII</i>) promoter forward
oED14	<u>ggcggccgc</u> TTGAATTCTGTAAGTAAAATTG	<i>elt-3</i> (<i>SacII</i>) promoter reverse
oED15	<u>ggcggccgc</u> CGTTAAATGCTCCAATAAAGTTT	<i>elt-3</i> (<i>BamHI</i>) promoter forward
oED16	<u>tttgatcc</u> TTGAATTCTGTAAGTAAAATTG	<i>elt-3</i> (<i>BamHI</i>) promoter reverse
oED17	<u>gccgcgg</u> CAATGCTACAGGTTCTAACTAC	<i>ceh-16</i> (<i>SacII</i>) promoter forward
oED18	<u>ggcggccgc</u> CCCCGCTCTAAGGAAGCT	<i>ceh-16</i> (<i>SacII</i>) promoter reverse
oED19	<u>ggcggccgc</u> CAATGCTACAGGTTCTAACTAC	<i>ceh-16</i> (<i>BamHI</i>) promoter forward

oED20	ttt <u>ggatcc</u> CCCCGCTCTAAGGAAGCT	<i>ceh-16</i> (<i>Bam</i> HI) promoter reverse
oED21b	ggg <u>gtacc</u> GTGTGCGGTTTTTTCTATGATG	<i>unc-54</i> 3'- <i>utr</i> reverse
oED22	gggg <u>atcgat</u> ATGAGTAAAGGAGAAGAAGAACTTTTC	<i>gfp</i> cDNA (<i>Cl</i> aI) forward
oED23	gg <u>ctgcag</u> ATGAGTAAAGGAGAAGAAGAACTTTTC	<i>gfp</i> cDNA (<i>Pst</i> I) forward

Supplemental Table 3: Restriction enzymes used for cloning

Insert	Restriction Enzymes
<i>unc-54</i> 3'-utr:: <i>gfp</i>	<i>Kpn</i> I, <i>Cla</i> I
<i>unc-54</i> 3'-utr:: <i>gfp</i>	<i>Kpn</i> I, <i>Pst</i> I
<i>let-502</i> cDNA	<i>Cla</i> I, <i>Not</i> I
<i>mel-11</i> cDNA	<i>Pst</i> I, <i>Not</i> I
<i>pak-1</i> cDNA	<i>Pst</i> I, <i>Not</i> I
<i>let-502</i> promoter	<i>Not</i> I, <i>Sac</i> II
<i>elt-3</i> promoter	<i>Not</i> I, <i>Sac</i> II
<i>ceh-16</i> promoter	<i>Not</i> I, <i>Sac</i> II
<i>mel-11</i> promoter	<i>Bam</i> HI, <i>Not</i> I
<i>elt-3</i> promoter	<i>Bam</i> HI, <i>Not</i> I
<i>ceh-16</i> promoter	<i>Bam</i> HI, <i>Not</i> I
<i>pak-1</i> promoter	<i>Not</i> I, <i>Sac</i> II
<i>elt-3</i> promoter	<i>Not</i> I, <i>Sac</i> II
<i>ceh-16</i> promoter	<i>Not</i> I, <i>Sac</i> II

Supplemental Table 4: List of transgenic lines

Transgene / Strain	Description
<i>sbEx206</i> / HR1807	
<i>sbEx207</i> / HR1808	<i>[pceh-16::let-502::gfp::unc-54 3'-utr; rol-6(su1006); elt-2::gfp]; let-</i>
<i>sbEx208</i> / HR1809	<i>502(sb118ts) I</i>
<i>sbEx209</i> / HR1810	Rescues embryonic arrest
<i>sbEx201</i> / HR1811	
<i>sbEx212</i> / HR1818	<i>[pelt-3::let-502::gfp::unc-54 3'-utr; rol-6(su1006); elt-2::gfp]; let-</i>
<i>sbEx213</i> / HR1819	<i>502502(sb118ts) I</i>
	Does not rescue embryonic arrest
<i>sbEx211</i> / HR1812	<i>[ppak-1::pak-1::gfp::unc-54 3'-utr; elt-2::gfp; myo-2::mCherry]; let-</i>
	<i>502502(sb118ts) I; pak-1(ok448) X</i>
	Rescues embryonic arrest
<i>sbEx228</i> / HR1874	
<i>sbEx231</i> / HR1877	<i>[ppak-1::pak-1::gfp::unc-54 3'-utr; sur-5::gfp]; let-502(sb118ts) I; pak-</i>
<i>sbEx232</i> / HR1878	<i>1(ok448) X</i>
<i>sbEx233</i> / HR1879	Rescues embryonic arrest
<i>sbEx234</i> / HR1896	<i>[pelt-3::pak-1::gfp::unc-54 3'-utr; sur-5::gfp]; let-502(sb118ts) I; pak-</i>
<i>sbEx235</i> / HR1897	<i>1(ok448) X</i>
<i>sbEx236</i> / HR1898	Does not rescue embryonic arrest
<i>sbEx241</i> / HR1904	<i>[pceh-16::pak-1::gfp::unc-54 3'-utr; sur-5::gfp]; let-502(sb118ts) I; pak-</i>
<i>sbEx250</i> / HR1929	<i>1(ok448) X</i>
<i>sbEx252</i> / HR1931	Does not rescue embryonic arrest

<i>sbEx253</i> / HR1932	
<i>sbEx254</i> / HR1938	<i>[pmel-11::mel-11::gfp::unc-54 3'-utr; rol-6(su1006)]; mel-11(it26ts) II</i> Rescues embryonic arrest
<i>sbEx255</i> / HR1939	
<i>sbEx256</i> / HR1940	
<i>sbEx257</i> / HR1941	<i>[pceh-16::mel-11::gfp::unc-54 3'-utr; rol-6(su1006)]; mel-11(it26ts) II</i> Little or no rescue of embryonic arrest
<i>sbEx258</i> / HR1942	
<i>sbEx259</i> / HR1943	<i>[pelt-3::mel-11::gfp::unc-54 3'-utr; rol-6(su1006)]; mel-11(it26ts) II</i> Little or no rescue of embryonic arrest
<i>sbEx260</i> / HR1944	