

Figure S1. Mating behavior of *lep-2* mutants, graphical representation.

Each bar corresponds to an individual male. The amount of time it took for a male to contact a hermaphrodite with his tail and to copulate is shown for each individual (spicule insertion was used to identify copulation; sperm transfer was not assayed). If a male failed to sense or copulate within the assay period of one hour, it was scored as “never”.

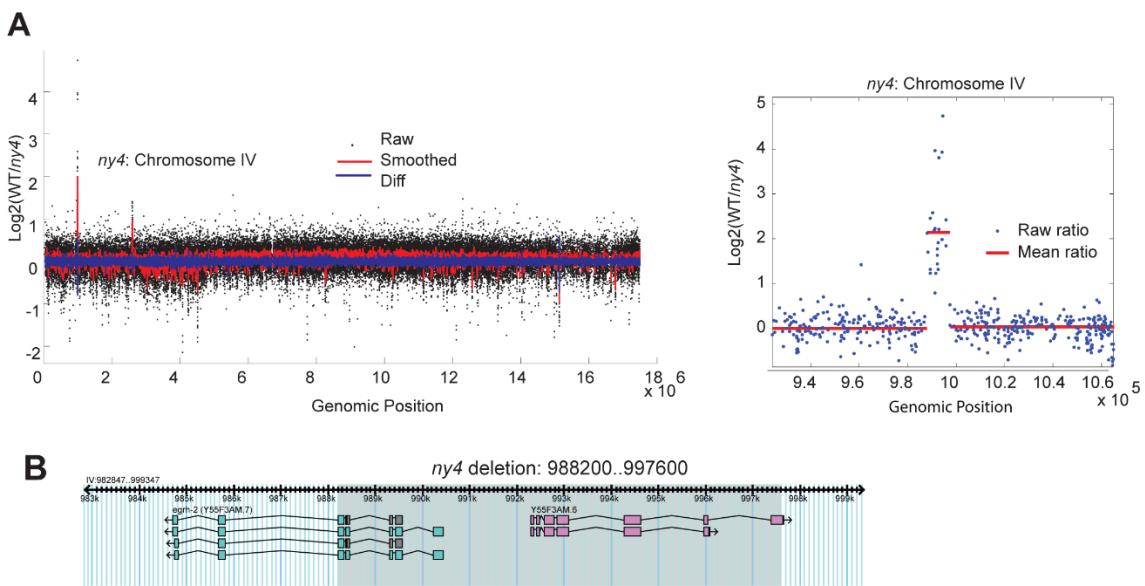


Figure S2. *lep-2* mapping and genomic position

(A) Fluorescence ratios for probes of Chromosome IV. Raw data points are black dots, a red line indicating smoothed average of data points and blue corresponds to the difference between the two values. Graph of probes containing the spike on the left arm of Chromosome IV, showing the local linearity of the probe ratios. Red line indicates the mean ratio for the left, middle and right segment.

(B) Genome browser-based view of the regions, including and flanking the 8 kb region shown in panel A.

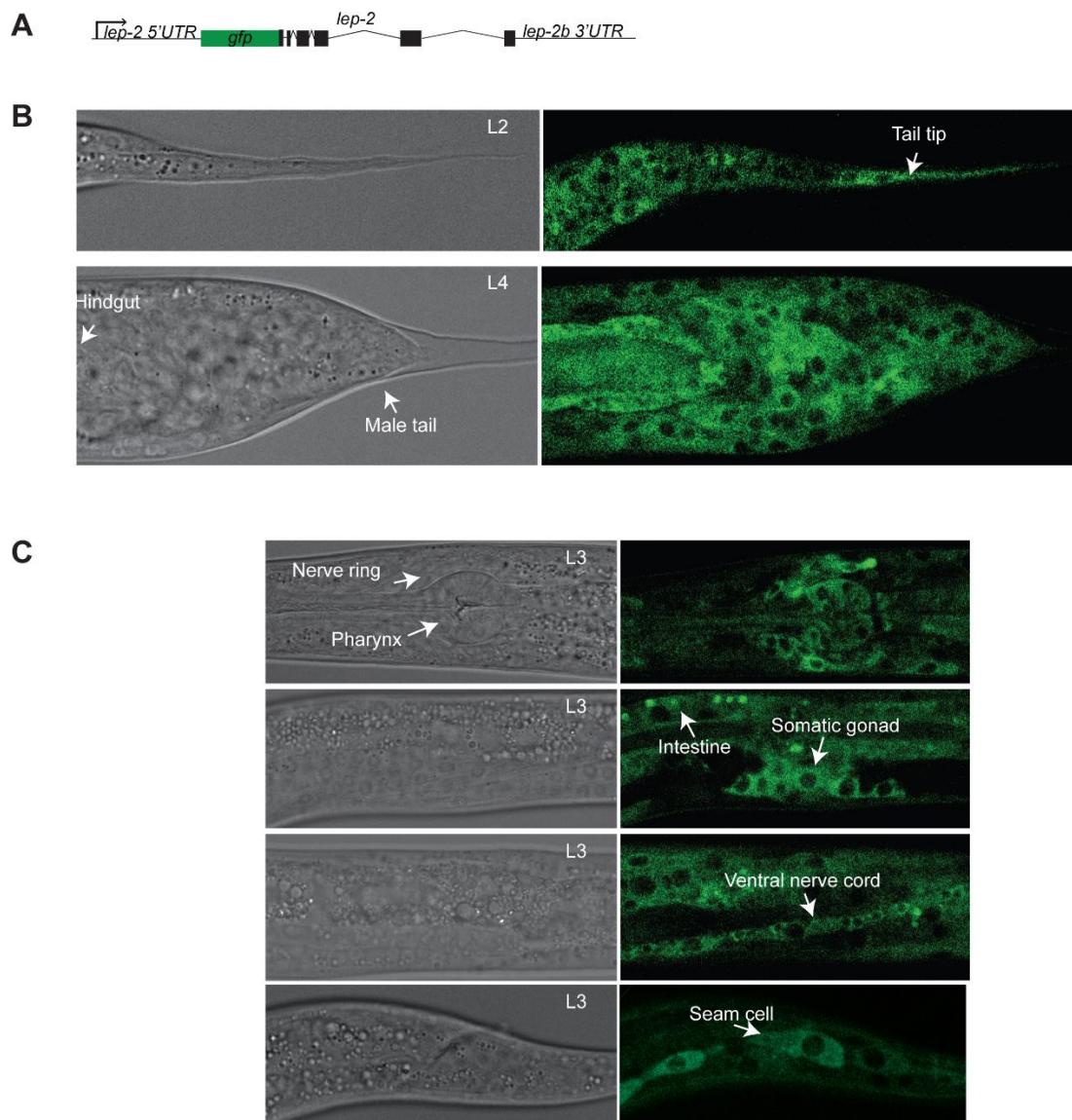


Figure S3. Expression of GFP::LEP-2

(A) Schematic of the transgene to express GFP::LEP-2, under the control of the *lep-2* promoter.
(B,C) Bright field and fluorescence confocal micrographs of animals transformed with GFP::LEP-2.
(B) GFP::LEP-2 expression in the tail tip of a L3 and L4 stage male. (C) Representative images of GFP::LEP-2 expression in various tissues and organs.

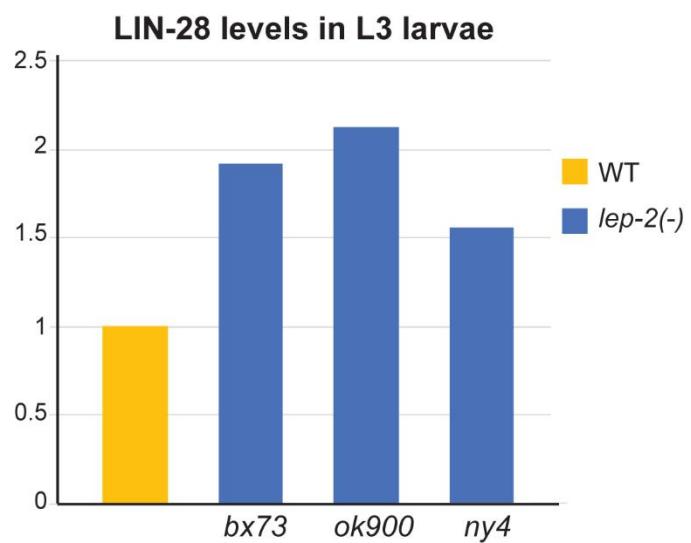
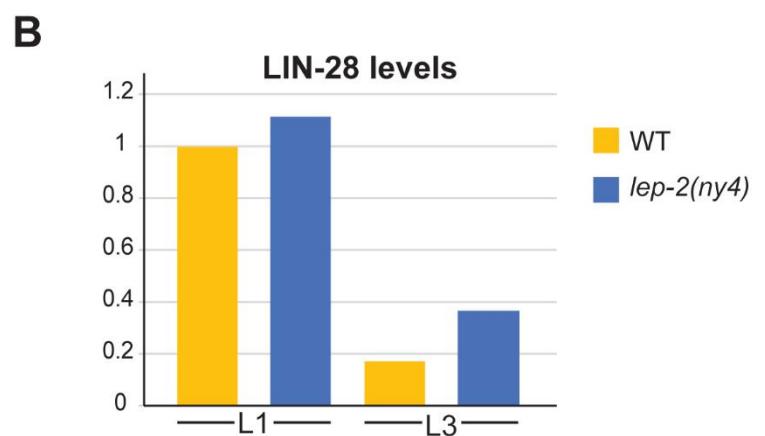
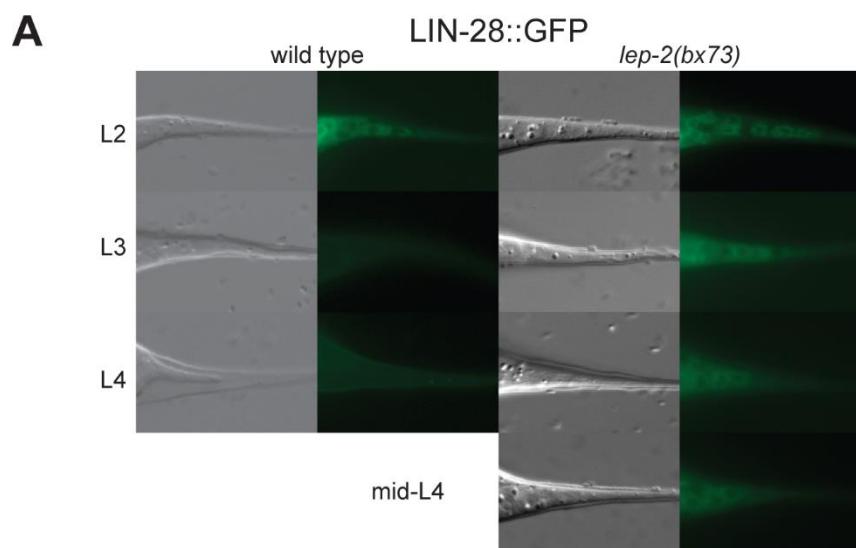


Figure S4. Expression of LIN-28::GFP in *lep-2(bx73)*

(A) DIC and fluorescence micrographs of tail tips in wild type and *lep-2* mutant males carrying the *lin-28>lin-28::gf-p::lin-28_3'UTR* transgene during larval development.
(B) Top: Quantification of Western blot data using the anti-LIN-28 antibody from Weaver et al. (2014. eLife 3, p e04265). Values are normalized to levels in wild-type L1 larvae. Actin was used as loading control. Bottom: Quantification of Western blot data examining levels of LIN-28 in L3 in wild type and three *lep-2* mutants using the anti-LIN-28 antibody from Seggerson et al. (2002. Dev. Biol. 243, p. 215-225). Values are normalized to wild-type levels.



Movie 1. Mating behavior of wild-type *C. elegans* males



Movie 2. Mating behavior of *lep-2* mutant *C. elegans* males

Table S1. Penetrance of delayed phenotypes in *lep-2(lf)* adults

Delayed phenotypes include molting adults and adults that are nonRol (*rol-1* encodes an adult-specific cuticle collagen).

Adult molts:	n	% Molted	% Not molted
<i>him-5(e1490)</i>	52	0	100
<i>lep-2(bx73); him-5</i>	46	76	24
<i>lep-2(bx147); him-5</i>	17	71	29
<i>lep-2(ok900); him-5</i>	20	15	85
<i>lep-2(sy68); him-5</i>	15	87	13
<i>him-5</i> post dauer	24	0	100
<i>lep-2(bx73); him-5</i> post dauer	34	0	100
Adult Rol hermaphrodites:	n	% nonRol	% Rol
<i>rol-1(e91)</i>	289	5	95
<i>rol-1(e91); lep-2(ok900)</i>	258	92	8
<i>rol-1(e91); lep-2(ok900)</i> post dauer	125	29	71

Table S2. Seam cell number and fusion of lateral alae are normal in *lep-2* animals
 Seam cell fusions were assayed using a GFP marker for adherens junctions, *ajm-1::GFP*; seam cell nuclei were labeled with *scm::GFP*.

Genotype	n	Avg. nr. of nuclei in the seam ¹	Percent with fused seam cells
<i>wls78[ajm-1::gfp, scm::GFP]</i>	50	16	100
<i>lep-2(ok900); wls78</i>	40	16	100

Table S3. Sequences of oligonucleotide primers used to make constructs.

	Name	Sequence (5'-3')
1	gfpnlp2_1	ggccactcggtcctgtgaactgattt
2	gfpnlp2_2	gaaaagttcttccttactcattgctaaaaatgtggaaaa
3	gfpnlp2_3	cacattttcagcaaatgagtaaaggagaagaac
4	gfpnlp2_4	ctgtttcatgacgtggcatttgtatagttcatcca
5	gfpnlp2_5n	ggatgaactataaaaaatgccacgtcatgaaacagattgtcgat
6	lp2ex5r	ccaatcaataaatcctttcctgtccactttc
7	lp2ex5f	gagaacatttcgagaaaaattgcgttttg
8	gfpnlp2_6	caagctcgccggatcaaatgacacac
9	lep2-7rn	ccgatttatcagctcagtcaccgagagc
10	lep2-6f	cgacttacttcgctcaaatgccacaaaaatttgcgttttg
11	cln28dnraf	gaatagtaattcctctgatgaaatgaaccatttaaggaagatatgagag
12	ln283utrcndndraf	ctatcaatattctcagtgttagatgattccatgctgacttggtagaggactgtatctgcaactg
13	ndndraln28r	gactctcatatctcctaataaggttcattcatcagaggaattactattctttc
14	5plin28-1fnew	cagcatttcggtaaaactctcaagcttg
15	cdndraln283utrf	cagttgcaagatacagtccctaccaagtcaagcatggaatcatctagacactgagaatattgata g
16	3plin-28-6r	gtattcaatcaatataaaaacaaaactctcg
17	plin28-7f	gtaaaaactctcaagcttgagggtg
18	3plin28-8r	cgatttatttcagcggtcgccc
19	lin-28_FW	tcgacggtagtatcgaggg
20	lin-28_RV	gagggtttgggtgacggggag