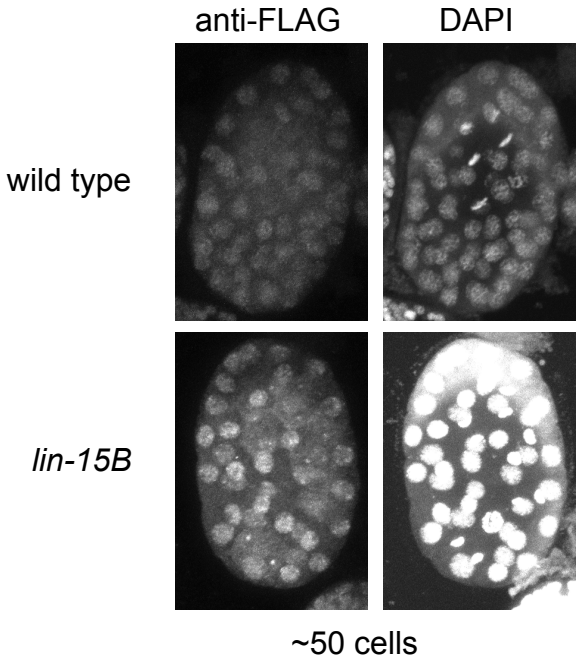

Figure S1: MET-2::FLAG accumulates in nuclei in *lin-15B* mutants by the ~50 cell stage similar to wild type
Wild type and *lin-15B* embryos expressing MET-2::FLAG at ~50 cell stage shown stained with anti-FLAG antibody and DAPI.

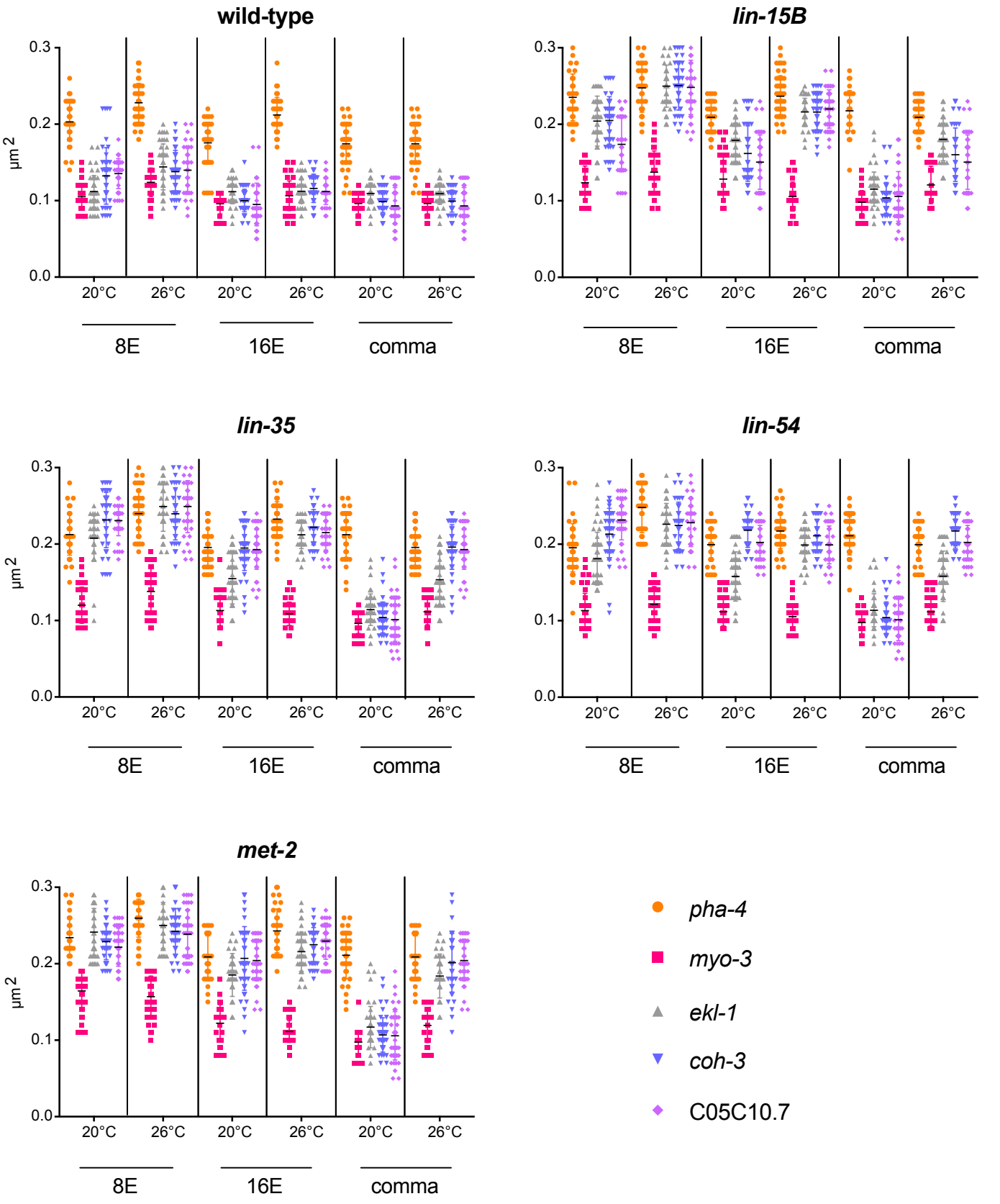

Figure S2 Related to Figure 4: Fluorescent in-situ hybridization of synMuv B regulated loci reveals more open chromatin in synMuv B mutants at higher temperatures

Wild-type (A), *lin-15B* (B), *lin-35* (D), *lin-54* (D), and *met-2* (E) embryos at 20°C and 26°C at 8E, 16E and comma stage were labeled with 568-5-dUTP (red) and Alexa Fluor 488 (green) probes 50kb upstream and 50kb downstream of *myo-3, pha-4, ekl-1, coh-3* and C05C10.7. Each dot represents the 3-D-distances between centroids (μm^2) of one intestinal cell.

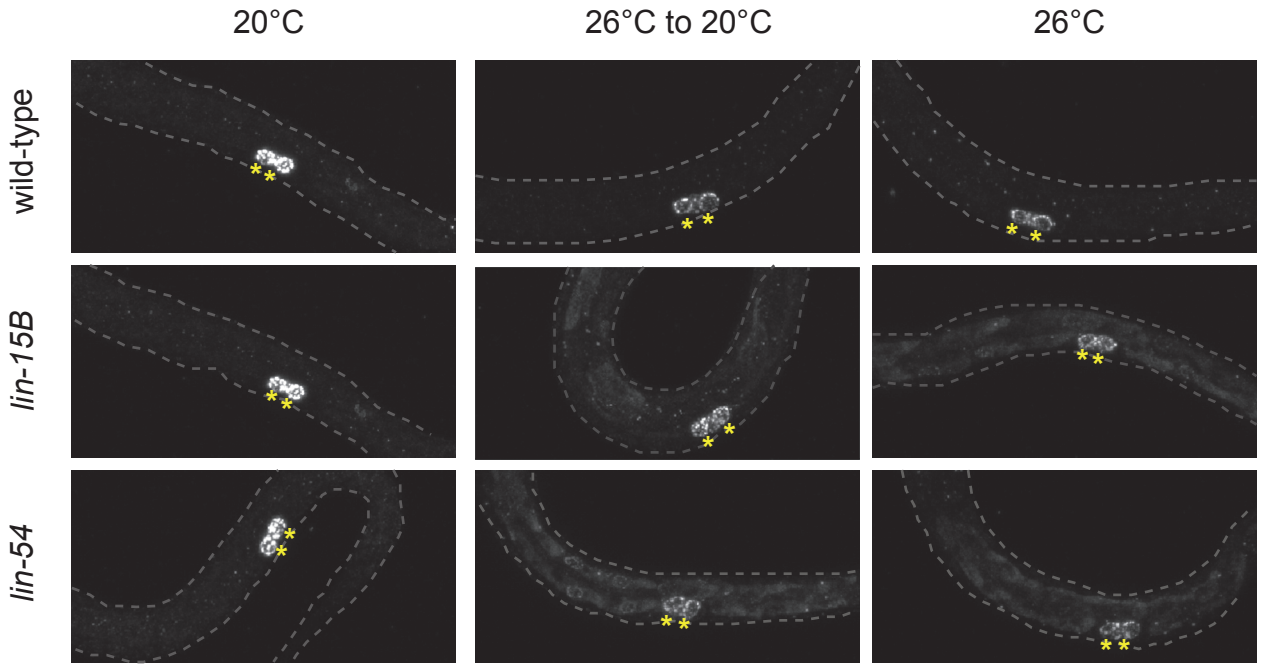

Figure S3 Related to Figure 5: synMuv B mutant embryos downshifted to low temperature at 16E ectopically express PGL-1

Wild-type, *lin-15B* mutant, and *lin-54* mutant embryos carrying a PGL-1:GFP transgene were placed at 26°C or 20°C in 1XM9 drops. Embryos were either kept at 26°C, downshifted to 20°C at 16E, or maintained at 20°C, and allowed to arrest at the L1 stage. L1 worms were fixed and imaged in Z-stack using confocal microscopy. Panels represent maximum projection of PGL-1:GFP. Asterisks mark primordial germ cells.

Table S1: Mean time to each intestinal developmental stage (min)

	wild-type		*lin-15B*		*lin-54*	
	20°C	**26°C**	**20°C**	**26°C**	**20°C**	**26°C**
2 cell - 8E	236	185	271	215	246	197
8E - 16E	349	297	373	342	372	334
16E - comma	479	418	495	440	491	434
comma - pretzel	590	531	619	564	619	555
pretzel - L1	691	644	725	672	720	661

Table S2: Difference in mean time to same genotype at 20°C to each intestinal developmental stage (min)

	wild-type		*lin-15B*		*lin-54*	
	20°C	**26°C**	**20°C**	**26°C**	**20°C**	**26°C**
2 cell - 8E	0	-51	0	-56	0	-49
8E - 16E	0	-52	0	-31	0	-38
16E - comma	0	-61	0	-55	0	-57
comma - pretzel	0	-59	0	-55	0	-64
pretzel - L1	0	-47	0	-53	0	-59

Table S3: Difference in mean time from wild type at same temperature to each intestinal developmental stage (min)

	wild-type		*lin-15B*		*lin-54*	
	20°C	**26°C**	**20°C**	**26°C**	**20°C**	**26°C**
2 cell - 8E	0	0	35	30	10	12
8E - 16E	0	0	24	45	23	37
16E - comma	0	0	16	22	12	16
comma - pretzel	0	0	29	33	29	24
pretzel - L1	0	0	34	28	29	17

Table S4: Strains used in this study

Strain Name	Genotype	Source
DUP0075	*pgl-1(sam33[pgl-1::gfp::3xFlag])*	Dustin Updike
EL634	*3XFlag::met-2*	Eleanor Maine
JM163	caIs79[elt-2p::dTomato, pRF4 (rol-6+)]	Jim McGhee
LNP0024	*lin-35(n745);* bnEx80(68XlacO +myo-3::mCherry+ worm genomic DNA); gwIs39[baf-1p::GFP::lacI::let-858 3\'UTR; vit-5::GFP]	This Study
LNP0026	*lin-54(n2231);* bnEx80(68XlacO +myo-3::mCherry+ worm genomic DNA); gwIs39[baf-1p::GFP::lacI::let-858 3\'UTR; vit-5::GFP]	This Study
LNP0027	*met-2(n4256);* bnEx80(68XlacO +myo-3::mCherry+ worm genomic DNA); gwIs39[baf-1p::GFP::lacI::let-858 3\'UTR; vit-5::GFP]	This Study
LNP0038	caIs79(elt-2p::dTomato;pRF4); *pgl-1(sam33[pgl-1::gfp::3xFlag])*	This Study
LNP0040	*lin-15B(n744)* bnEx80(68XlacO +myo-3::mCherry+ worm genomic DNA); gwIs39[baf-1p::GFP::lacI::let-858 3\'UTR; vit-5::GFP]; (caIs79(elt-2p::dTomato;pRF4))	This Study
LNP0041	*lin-15B(n744)* caIs79(elt-2p::dTomato;pRF4); *pgl-1(sam33[pgl-1::gfp::3xFlag])*	This Study
LNP0049	*lin-54(n2231)* caIs79(elt-2p::dTomato;pRF4); *pgl-1(sam33[pgl-1::gfp::3xFlag])*	This Study
LNP0050	bnEx80(68xlacO+myo-3::mCherry+worm genomic DNA); gwIs39[baf-1p::GFP::lacI::let-8583\'UTR;vit-5::GFP];caIs79(elt-2p::dTomato;pRF4))	This Study

Table S5: Primers used for DNA FISH

		Forward	Reverse
Upstream of *pha-4*	Pair 1	CGATGGAGCGCACTTGCACG	CAATCCCGGTAAAATGACG
	Pair 2	GGCAAACTGGTAAATTGTCGG	GCACCAGGCGCACTTTTGGC
	Pair 3	GCTGCTGGTTTTGACTGTGG	GGGTGAGTATCCAATTCCG
	Pair 4	CAACTCGTGATGACTTTAACC	GGTTGCACAGCCCTACATG
	Pair 5	GACTGAGTGAGATTGTAAAC	CTCGTATAAAGTTATTTCCCAGG
Dnstream of *pha-4*	Pair 1	CCAGCCACTGTGACATCGAC	CTTCAATGGTTAAACAAAGTTATG
	Pair 2	CTGATGCTAACCAAGAGAGTG	CATCGTCTAACTTTGAGCATAG
	Pair 3	CCTAACCGGTCAAATTTGTG	GCTAGAAGAATCAAGGCTTTTCC
	Pair 4	GTAATTGGTGGAAAAAGAAAATTTG	GCGGTCATTTTTCATATGCATCG
	Pair 5	CTCACTAACTTTCTCACAGAC	GTCTCGTTCAGCCACAAAAATTGC
Upstream of *myo-3*	Pair 1	CACCACCAACTCCCCCTTCT	GGTATATTTTCAATTGTGCC
	Pair 2	GCTTCATGGTAGATGGATTTG	CATTGCTCTCATTCCCACATGCTG
	Pair 3	GGATATAATTTCTTTGCAGGATC	GGCAATGAAACAACAACTTTTG
	Pair 4	CCAAGGTACGAGACATTTAC	GATGATATCAAGATTTTGAGAG
	Pair 5	GGCATGTATTTTCAGAAATATAC	GGATGTTATCAAAAGTTGAAG
Dnstream of *pha-4*	Pair 1	CCGCACACAAGTCTCAAATG	GGTGTCACAGAAATTCTATATTGG
	Pair 2	CGTTGATTTTACGAATCTTCCC	GCAATCAAGTCTAAACAATTTTTC
	Pair 3	CATAGAATTTGCTTACGTTTC	GATGAATTCACCCATTTCC
	Pair 4	GGACTTCTTCGATTGAG	GGCACAGTTTTAAGTGTTTCCG
	Pair 5	GTGGACATACATCAGCGTCAG	GTCTTGTTTCGGATCCTCATAAG
Upstream of *ekl-1*	Pair 1	GGGAGGGATTCTCAAAATCTTTC	GCAAGCTTTATTGGCAGATTCAG
	Pair 2	GGTTCTTAATTTTCTCTGAAAAAAGC	CGCGTGTCGTCGTTGGAGTTG
	Pair 3	CATGGCCTCCCTATTAGAAG	CCAAAATTGGGGGTTCCTCGAG
	Pair 4	CAAGTTTCAACAACACCGAATCC	GCTCTTTCAAATGTTGTTCAAGC
	Pair 5	GGATCATCTGCTGCTCCAACTCC	CCACTGGAGGTACAATTTTTACGC
Dnstream of *ekl-1*	Pair 1	CGAGTACCCCAAAAGCCGGC	GCCACATTACCAATAGTTTAGG
	Pair 2	GACGTGCCCAACATTGCC	CTGATAAAGTTTGCGCTCGG
	Pair 3	GCCACATGAGACACACACG	CTCCCAACAATGGTGCGCCTC
	Pair 4	CCGGGTACATCTCTCTGTTTC	GAGTTGAGCACACACATGG
	Pair 5	GCTGACATTGAACCGGATGAC	CGTCGCCTATCTTGCAATGG
Upstream of *coh-3*	Pair 1	GGTCATGTTGGACTAAATATAG	CCCGTTTTTCAAATTTATTTC
	Pair 2	GCAGAGATAAAGTGCTTATCATC	GGAGGTCAGCAATTAATATTTG
	Pair 3	GCAGACCTTTTCTTTTTCAC	CCAGGCACGTATAGACCAAGAACC
	Pair 4	GGGTGGCTGGTGACTTTGGAATGG	CCGACTCACTTCATTCCAAAC
	Pair 5	GCTCGGATTGCACGGATTGGCC	CTCACTTTCAGAATTAGAAC
Dnstream of *coh-3*	Pair 1	CCTCTTCTCTCTCTGTTCC	CACAACCTGAGCTTCTTGTTTATG
	Pair 2	GCGTCCCCTCCGTAAAGG	CTCGAATAAAAATGAAAACTTG
	Pair 3	CTGGAATCTGTGAAATGAATG	GTTGTACATAGTATGCCCTCG
	Pair 4	GTGGAGCAACCTATCCCC	GAAAAAATAGCTGACATTTTG
	Pair 5	GTCTTTATCCCGCCATTCTTCC	CTAATTGTTGGTTGTGAGG

Upstream of C05C10.7	Pair 1	CTAGCAGTATAAGTGTCAC	GACTTGAAGCTTGAAACGC
	Pair 2	GACTAAATTTATAACAACTTTATAG	GAGTAGCATCTCAGAACTG
	Pair 3	GGTATTCGGAAAACGGGTGAAACC	GTACTTGCAGTTTGCAGAAAG
	Pair 4	GACAAATGGCATCAAATATAG	GAAATCACAACAATTGAAATTCTG
	Pair 5	CCGATTAAGACCCGGACTTTAATTAC	CGACGAAAAGGAGAGACTCACTGG
Dnstream of C05C10.7	Pair 1	CCACAGAAAGTCCAATCTCG	CCTCGCGATTGTTGGGGAATC
	Pair 2	CGAGCCACTCAGCAAGGAAG	CAGCAACGTTGGCGAGTTCCTC
	Pair 3	CGTCTCATTGGAAAGGAGG	CGAGCCACTCAGCAAGGAAG
	Pair 4	GTAGGTATTGTTTGATTCGG	CGTGATGATCTTTTGGGATATCG
	Pair 5	GAGGTGGATGGAAAAAGAAG	GGAGCAAAAAAGATAGAGGAAG