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Supporting Information
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Control of Germline *torso* Expression by the BTB/POZ Domain Protein Pipsqueak Is Required for Embryonic Terminal Patterning in Drosophila

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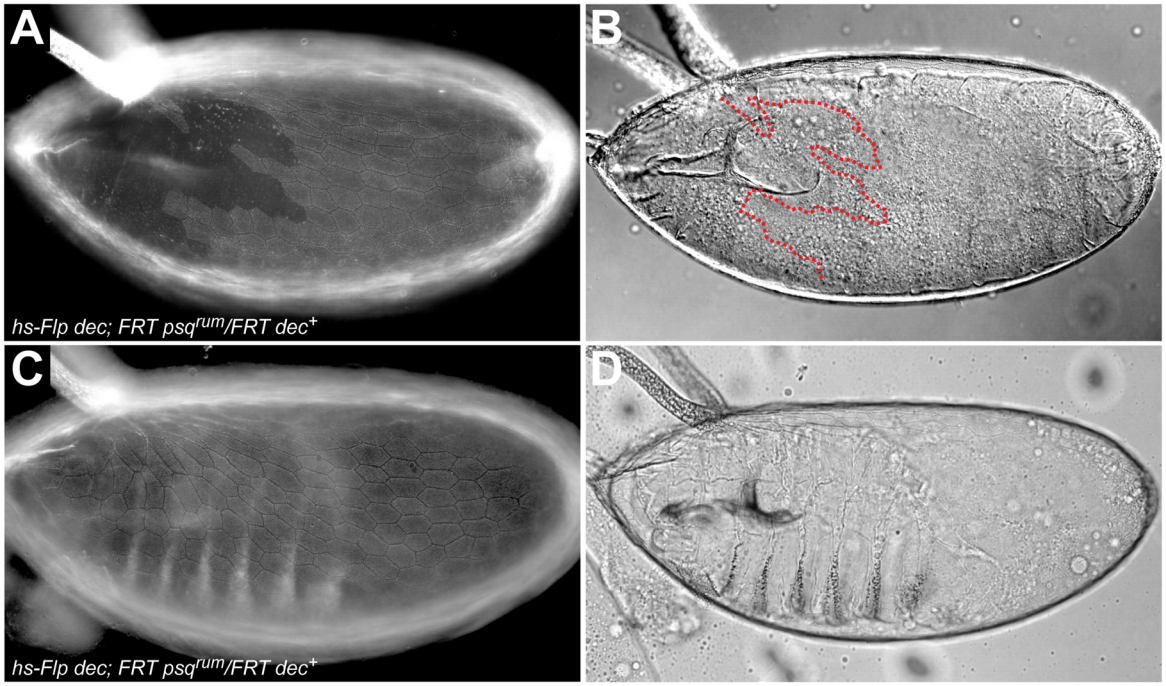

FIGURE S1.—*psq*^{rum} mutant follicle cell clones do not affect terminal patterning. (A,B) *psq*^{rum} somatic clones in the follicle epithelium do not affect terminal regions in the embryo. *psq*^{rum} mutant follicle cells are marked by the loss of the *dec*$^{+}$ marker, resulting in a transparent chorion. A large *dec*$^{-}$; *psq*^{rum} clone covers the anterior part of the egg shown in (A). Note the presence of a normal head skeleton in the phase contrast view shown in (B). The border of the clone is indicated by a hatched red line in (B). (C,D) Conversely, *psq*^{rum} germline clones produce terminal phenotypes even when somatic follicle cells are wild-type as detected by the absence of *dec*$^{-}$ clones. (A) and (C) are dark-field images. (B) and (D) are phase-contrast images of the embryos shown in (A) and (C), respectively.

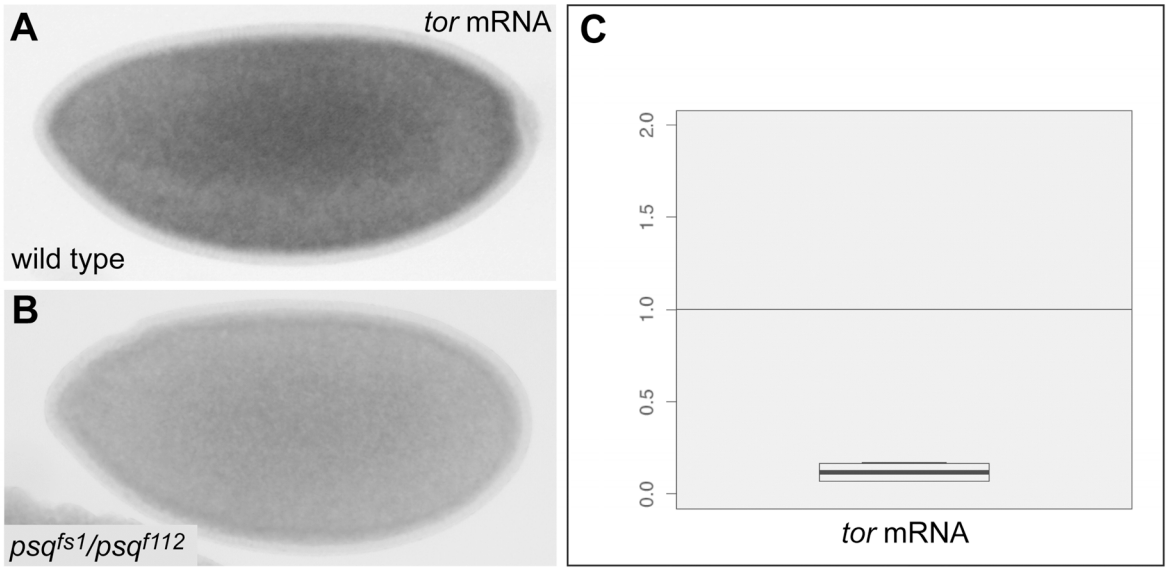

FIGURE S2.—*tor* mRNA levels are reduced in ovaries and embryos from *psq*^{fs1}/*psq*^{f112} transheterozygous females (A,B) *tor in situ* hybridization in wild-type embryo (A) and *psq*^{fs1}/*psq*^{f112} mutant (B). *tor* mRNA levels are strongly reduced in *psq*^{fs1}/*psq*^{f112} embryos. (C) *tor* mRNA is eight-fold reduced in *psq*^{fs1}/*psq*^{f112} ovaries compared to the wild type, as detected by real-time PCR. The Y-axis indicates relative transcript levels as fold-change between wild-type and *psq*^{fs1}/*psq*^{f112} ovaries.

TABLE S1

Analysis of heteroallelic combinations between *psq^{rum}* and other *psq* alleles or deficiencies uncovering *psq*

psq alleles or deficiencies	homozygous phenotype	maternal-effect phenotype of heteroallelic combination with *psq^{rum}*	nature of mutation	reference
psq[rum]	All embryos show terminal defects (lack of structures posterior to A7; n=100). In addition embryos frequently show deletions of one or more abdominal segments.		EMS-induced; G to A nucleotide substitution affecting the splicing donor site of intron 6, which is common to all known *psq* transcripts. This leads to partial retention of the intron in the mRNA and is predicted to cause the addition of 16 amino acids followed by a stop codon.	this work
psq[8109]	Decreased viability of adults, female sterile, posterior group, dorsalized eggshell and embryo, early oogenesis defects.	96% of embryos show little cuticle, 4% of embryos develop contiguous cuticle and lack terminal structures (n=100)	P{PZ} insertion into the largest intron of *psq-1*. Aberrant fusion protein created.	HOROWITZ and BERG 1995
psq[0115]	Decreased viability of adults, female sterile, posterior group, dorsalized eggshell and embryo, early oogenesis defects.	94% of embryos show little or no cuticle, 6% of embryos develop contiguous cuticle and lack terminal structures (n=100)	P{PZ} insertion into the largest intron of *psq-1*. Aberrant fusion protein created.	HOROWITZ and BERG 1995
psq[fs1]	Female sterile, posterior group, grandchildless	Embryos do not hatch. 80% of embryos lack segment A8 and/or spiracles (n=50)	P{lacW} insertion into the first intron of *psq-1*.	SIEGEL *et al.* 1993
psq[rev2]	n.d. *	Fertile	Isolated as EMS-induced revertant of *psq* overexpression in the eye. Deletion of 11 bp, resulting in a premature stop codon in the BTB domain. The P{GSV1}lola[GS88A8] insertion is still present on the chromosome.	FERRES-MARCO *et al.* 2006

psq[rev4]	n.d. *	Many collapsed eggs. 6.25% of embryos develop contiguous cuticle. These embryos lack abdominal segments (n=80).	Isolated as EMS-induced revertant of *psq* overexpression in the eye. Nucelotide substitution causing a Q530>stop mutation. The P{GSV1}lola[GS88A8] insertion is still present on the chromosome.	FERRES-MARCO *et al.* 2006
psq[rev7]	n.d. *	Fertile	Isolated as EMS-induced revertant of *psq* overexpression in the eye. Amino acid replacement M1I in the start Methionine of Psq1. The P{GSV1}lola[GS88A8] insertion is still present on the chromosome.	FERRES-MARCO *et al.* 2006
psq[rev9]	n.d. *	Weakly fertile. Adults show narrow blistered wings with extra veins. Embryos do not show terminal or other morphological defects (n=50).	Isolated as EMS-induced revertant of *psq* overexpression in the eye. G to A nucleotide substitution affecting the splicing donor site of intron 2 (72 bp), leading to retention of the intron in the mRNA. This causes the in-frame addition of 24 amino acids within the BTB/POZ domain, presumably disrupting the conserved BTB pocket domain, which is important for dimerization. The P{GSV1}lola[GS88A8] insertion is still present on the chromosome.	FERRES-MARCO *et al.* 2006
psq[rev12]	n.d. *	90% of embryos show little or no cuticle, 10% of embryos develop contiguous cuticle and lack terminal structures (n=80)	Isolated as EMS-induced revertant of *psq* overexpression in the eye. Amino acid replacement G867D in the third PSQ repeat. The P{GSV1}lola[GS88A8] insertion is still present on the chromosome.	FERRES-MARCO *et al.* 2006

psq[rev14]	n.d. *	98% of embryos show little or no cuticle, 2% of embryos develop contiguous cuticle and show posterior and terminal defects (n=100)	Isolated as EMS-induced revertant of *psq* overexpression in the eye. Nucleotide substitution causing a Q582>stop mutation. The P{GSV1}lola[GS88A8] insertion is still present on the chromosome.	FERRES-MARCO *et al.* 2006
psq[KG02404]	Viable, female-sterile	Embryos do not hatch. 60% of embryos lack segment A8 and/or spiracles (n=50)	P{SUPor-P} insertion in *psq-1* 5'-UTR	BELLEN *et al.* 2004
psq[KG00811]	Lethal	Fertile	P{SUPor-P} insertion in the largest intron of *psq-1*, 0.7 kb downstream of the transcription start site of *psq-3* transcripts	BELLEN *et al.* 2004
psq[EP2011]	Viable, female-sterile. Homozygous females lay no eggs.	Embryos do not develop cuticle (n=100).	P{EP} insertion in the largest intron of *psq-1*, 71 bp upstream of the transcription start site of *psq-3* transcripts	BELLEN *et al.* 2004
Df(2R)47A		Most embryos undeveloped, few embryos with little cuticle		FlyBase
Df(2R)E3363		Most embryos undeveloped, few embryos develop and show terminal defects		FlyBase

Phenotypes of embryos from females carrying heteroallelic combinations of psq^{rum} are indicated. *: We were unable to determine homozygous phenotypes of the *psq* revertant alleles, all of which are lethal in homozygous state and in all trans-heterozygous combinations tested. Lethality of these chromosomes is presumably due to the presence of additional mutations or due to the P{GSV1}lola[GS88A8] P-element insertion.

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