

Supplemental Data

Drosophila* Pico and Its Mammalian Ortholog*Lamellipodin Activate Serum Response Factor****and Promote Cell Proliferation**

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SUPPLEMENTAL EXPERIMENTAL PROCEDURES**Fly Strains**

Transgenes and mutations used were as follows: *UAS-Ras85D^{V12}* (Lee et al., 1996); *UAS-E2F* and *UAS-Dp* (Neufeld et al., 1998); *MS1096-GAL4* (Capdevila and Guerrero, 1994); *en-GAL4*, *UAS-GFP* (Neufeld et al., 1998); *ptc-GAL4*, *UAS-GFP* (Brennecke et al., 2003). Descriptions of other strains can be found on Flybase (<http://flybase.bio.indiana.edu/>).

To make *FRT pico^{kl}* for mosaic analysis, we recombined *RS(5-HA-1907)* at 20B1 (Ryder et al., 2004) with *pico^{kl}* and resolved the double *FRT* to a single site by *FLP*-mediated site-directed recombination. A similar strategy was used to generate *FRT20B Ubi-GFP*, *FRT20B tub-GAL80* and *FRT20B +*. *FRT* sites were verified by PCR and sequencing. Positively marked clones were made by crossing *FRT20B tub-GAL80/Y; Act5C-GAL4 UAS-GFP* to *FRT20B pico^{kl}/FM7c; hsFLP* and to *FRT20B +; hsFLP*.

The genotypes of the animals described in the paper are listed below.

Figure Genotypes

- 1C. *pico^{kl}/Y*
FM7, Ubi-GFP/Y
- 1D. *FRT20B, tub-GAL80/ FRT20B, +; A>y>GAL4, UAS-GFP / hsFLP*
- 1E. *FRT20B, tub-GAL80/ FRT20B, pico^{kl}; A>y>GAL4, UAS-GFP / hsFLP*
- 2A,C. *tub-GAL4/ TM6, Sb*
tub-GAL4/ UAS-pico^{IR}
- 2D. *en-GAL4, UAS-GFP/+; UAS-pico/ TM6B*
- 2E. *en-GAL4, UAS-GFP/+; UAS-pico/ UAS-pico^{IR}*
- 2F. *MS1096-GAL4/ Y*
- 2G. *MS1096-GAL4/ Y;; UAS-pico^{IR}/ UAS-pico^{IR}*
- 2H-J. *en-GAL4, UAS-GFP/+, +/ TM6B*
en-GAL4, UAS-GFP/+, +/ UAS-pico^{IR}
- 2K. *hsFLP¹²²:: +/A>CD2>GAL4, UAS-GFP_{nts}*
- 2L. *hsFLP¹²²:: UAS-pico^{IR}/ A>CD2>GAL4, UAS-GFP_{nts}*
- 3A. *MS1096-GAL4/ Y*
- 3B. *MS1096-GAL4/ Y;; UAS-pico/ UAS-pico*
- 3C-E. *en-GAL4, UAS-GFP/+, +/ TM6B*
en-GAL4, UAS-GFP/+, +/ UAS-pico
- 3F. *hsFLP¹²²:: +/A>CD2>GAL4, UAS-GFP_{nts}*
- 3G. *hsFLP¹²²:: UAS-pico/ A>CD2>GAL4, UAS-GFP_{nts}*

- 3H,J. *arm-GAL4/+*
3I,J. *arm-GAL4/ UAS-pico; +/- UAS-pico*
4. *ptc-GAL4, UAS-GFP/+; UAS-pico^{IR}/ +*
ptc-GAL4, UAS-GFP/+
ptc-GAL4, UAS-GFP/+; UAS-pico /+
ptc-GAL4, UAS-GFP/UAS-E2F, UAS-DP
ptc-GAL4, UAS-GFP/UAS-E2F, UAS-DP; UAS-pico/+
- 5A. *MS1096-GAL4/ Y;; MKRS/ +*
MS1096-GAL4/ Y;; UAS-pico/+
MS1096-GAL4/ Y; UAS-DN-Egfr/+; UAS-DN-Egfr/ MKRS
MS1096-GAL4/ Y; UAS-DN-Egfr/+; UAS-DN-Egfr/ UAS-pico
- 5B. *en-GAL4, UAS-GFP/+; UAS-pico/ +*
- 5C. *MS0196-GAL4/Y;; UAS-Egfr/+*
MS0196-GAL4/Y
MS0196-GAL4/Y;; UAS-pico/+
- 5D. *MS0196-GAL4/+;; UAS-Egfr/ MKRS*
MS0196-GAL4/ +;; UAS-Egfr/ UAS-pico^{IR}
- 5F. *vg-GAL4/+; UAS-Ras^{V12}/ MKRS*
vg-GAL4/+; UAS-Ras^{V12}/UAS-pico^{IR}
- 5G. *MS1096-GAL4/ Y;; UAS-pico-RA-PH/ +; MKRS/ +*
MS1096-GAL4/ Y;; UAS-pico-RA-PH/ +; UAS-pico/ +
- 5H. *FM7/MS1096-GAL4; UAS-pico-RA-PH/+*
pico^{k1}/MS1096-GAL4; UAS-pico-RA-PH/+
- 5I. *hsFLP¹²²; A>y>GAL4, UAS-GFP /+; UAS-pico^{IR}/ +*
hsFLP¹²²; A>y>GAL4, UAS-GFP /+; UAS-pico/ +
hsFLP¹²²; A>y>GAL4, UAS-GFP /+; UAS-Ras^{V12}/ +
- 6A. *en-GAL4, UAS-GFP/+*
en-GAL4, UAS-GFP/+; UAS-pico^{IR} /+
en-GAL4, UAS-GFP/+; UAS-pico/+
en-GAL4, UAS-GFP/ ena²¹⁰; UAS-pico/+
en-GAL4, UAS-GFP/+; UAS-Ena/+
- 6B. *MS0196-GAL4/Y*
MS0196-GAL4/Y;; UAS-pico^{IR} / +
MS0196-GAL4/Y;; UAS-pico/ +
MS1096-GAL4/Y; UAS-Ena/+
MS0196-GAL4/Y; ena²¹⁰/ +; UAS-pico/ +
MS0196-GAL4/Y; UAS-DN-Egfr/ +; UAS-DN-Egfr/ UAS-pico
- 6C. *MS1096-GAL4/Y; UAS-pico/ +*
MS0196-GAL4/Y; UAS-DN-Egfr/ +; UAS-DN-Egfr/ UAS-pico
- 6F. *MS0196-GAL4/Y; ena²¹⁰/ +; MKRS/ +*
MS0196-GAL4/Y; ena²¹⁰/ +; UAS-pico/ +
MS1096-GAL4/Y;; UAS-pico/ Dr
MS1096-GAL4/Y;; UAS-ena/ MKRS
MS1096-GAL4/Y;; UAS-ena/UAS-pico
MS1096-GAL4/Y;; UAS-ena/ UAS-pico^{IR}
MS1096-GAL4/Y;; UAS-pico^{IR}/ Dr
- 7H. *hsFLP¹²²;; +/- A>CD2>GAL4, UAS-GFP_{nl}*
hsFLP¹²²;; UAS-mal-d/ A>CD2>GAL4, UAS-GFP_{nl}
MS1096-GAL4/ Y;; MKRS/ +
MS0196-GAL4/ Y;; UAS-mal-d/ +

MS0196-GAL4/ Y;; UAS- mal-d/ UAS-pico
MS0196-GAL4/ Y;; UAS- mal-d/ UAS-pico^{IR}
MS0196-GAL4/ Y; bs²/ +; MKRS/ +
MS0196-GAL4/ Y; bs²/ +; UAS-pico/ +

SUPPLEMENTAL REFERENCES

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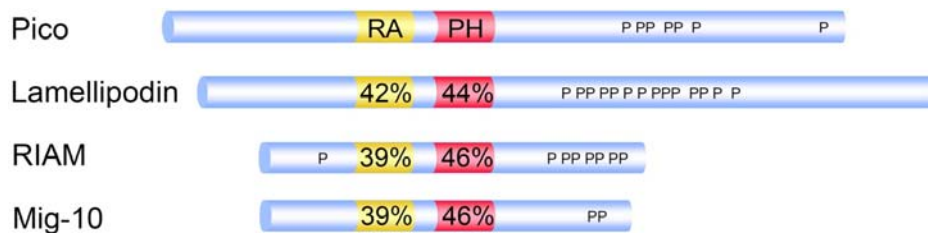


Figure S1. Domain Alignment and Percentage Homology

Shown are the domain structures of *Drosophila* Pico, human Lamellipodin, human RIAM and *C.elegans* MIG-10 proteins. All share a central region, containing RA (Ras-association) and PH (Pleckstrin homology) domains, and a number of poly-proline stretches (P). Percentage sequence identities within the RA and PH domains, relative to Pico, are indicated.

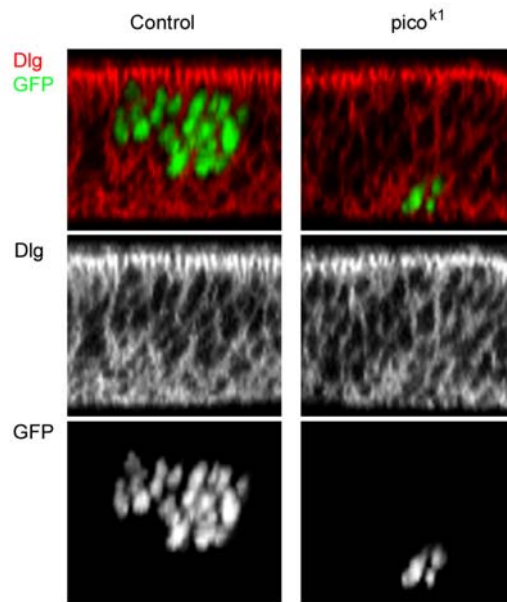


Figure S2. *pico*^{k1} Mutant Clones Are Basally Located in Wing Disc Epithelia

Compared to wild-type control clones, which are located in apical sections, *pico*^{k1} mutant clones are located more basally. Discs were stained with Discs-large, which marks an apical region of lateral membranes. Merged images show Dlg in red and clonal nuclei positively marked with GFP in green.