



### Figure S4. $\alpha$ PS2 function in epithelial sheath muscles and egg elongation

(A-A'') Clones of cells lacking  $\alpha$ PS2 were induced in single cell muscles of the epithelial sheath. Mutant cells had no  $\alpha$ PS2 (green, A) and the actin (red, A') detached from the ends of the muscles (white arrow shows muscle-muscle attachment of wild type cells and green arrow a muscle detached). (B-B''') Re-expressing  $\alpha$ PS1 (blue, B'') in cells lacking  $\alpha$ PS2 (green, B') did not rescue the detachment and induced an increase in actin levels (red, B'). (C) Eggs produced by females homozygous for the *if<sup>V2</sup>* viable allele range from fully elongated to round. (D) Quantitation of the shape of eggs produced by *if<sup>V2</sup>* homozygous, *if<sup>V2</sup>/FM6* and *wild type (wf)* females were mounted in PBS and measured with ImageJ. The ratio of length/width were plotted against the frequency (n=100 for each genotype). Compared to the controls, eggs produced by *if<sup>V2</sup>* homozygous females were rounder.  $p [if^{V2}/if^{V2}/FM6]=1.077E-35$ ,  $p [wf/if^{V2}/FM6]=0.017$  (t-test two samples assuming equal variance).