Supplementary Figures

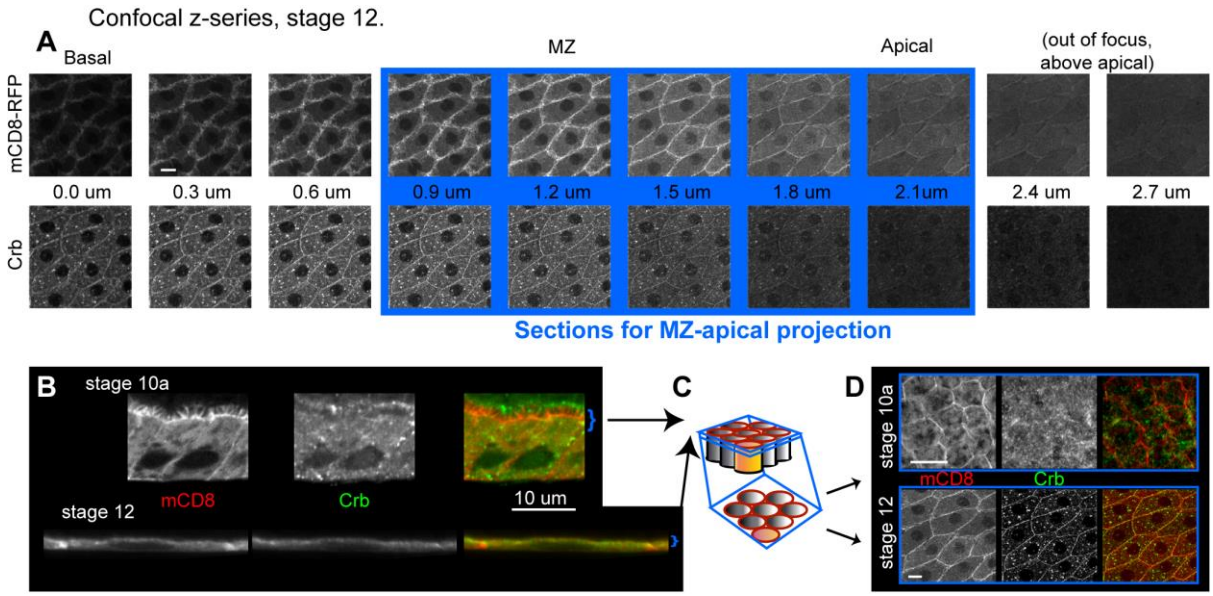

Figure S1. Method for distinguishing apical from junctional staining. (A) Representative z-series of ten 0.3- µm sections, stage 12 egg chamber co-stained with mCD8-RFP and Crb. (B) Cross-sectional images from a stage 10 and 12 egg chambers. (C) Cartoon showing projection of junctional-apical slices. (D) Resulting maximal projections of stage 10 and 12 MZ-apical region. See Materials and Methods for further detail. Scale bars: 10 µm.

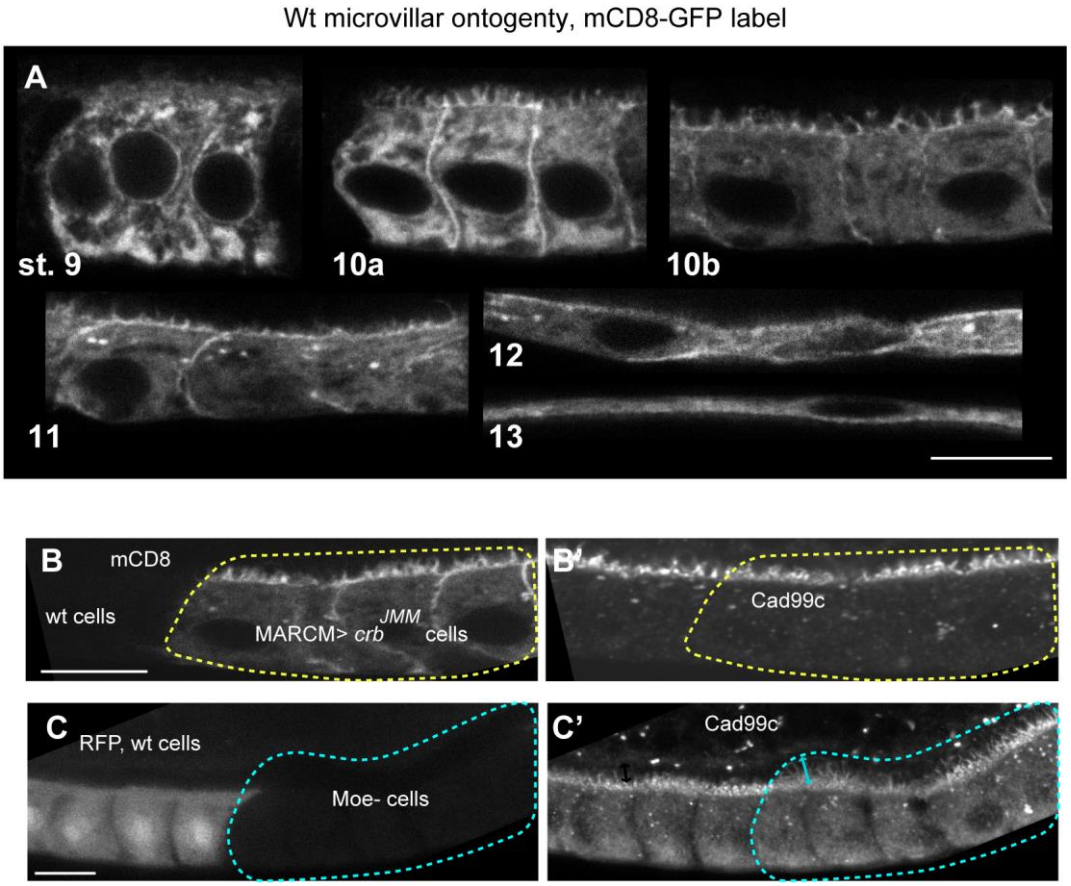

Figure S2. ***crb*** **and** ***Moe*** **phenotypes are not attributable to effects on microvilli.** (A) Normal MV ontogeny; outgrowth in stage 10a is followed by recession in stage 11. (B) Stage 10 crb^{JMM} clones had no microvillar phenotype. (C) Stage 10 *Moe*-null clones had abnormally long microvilli. Scale bars: 10 μm.

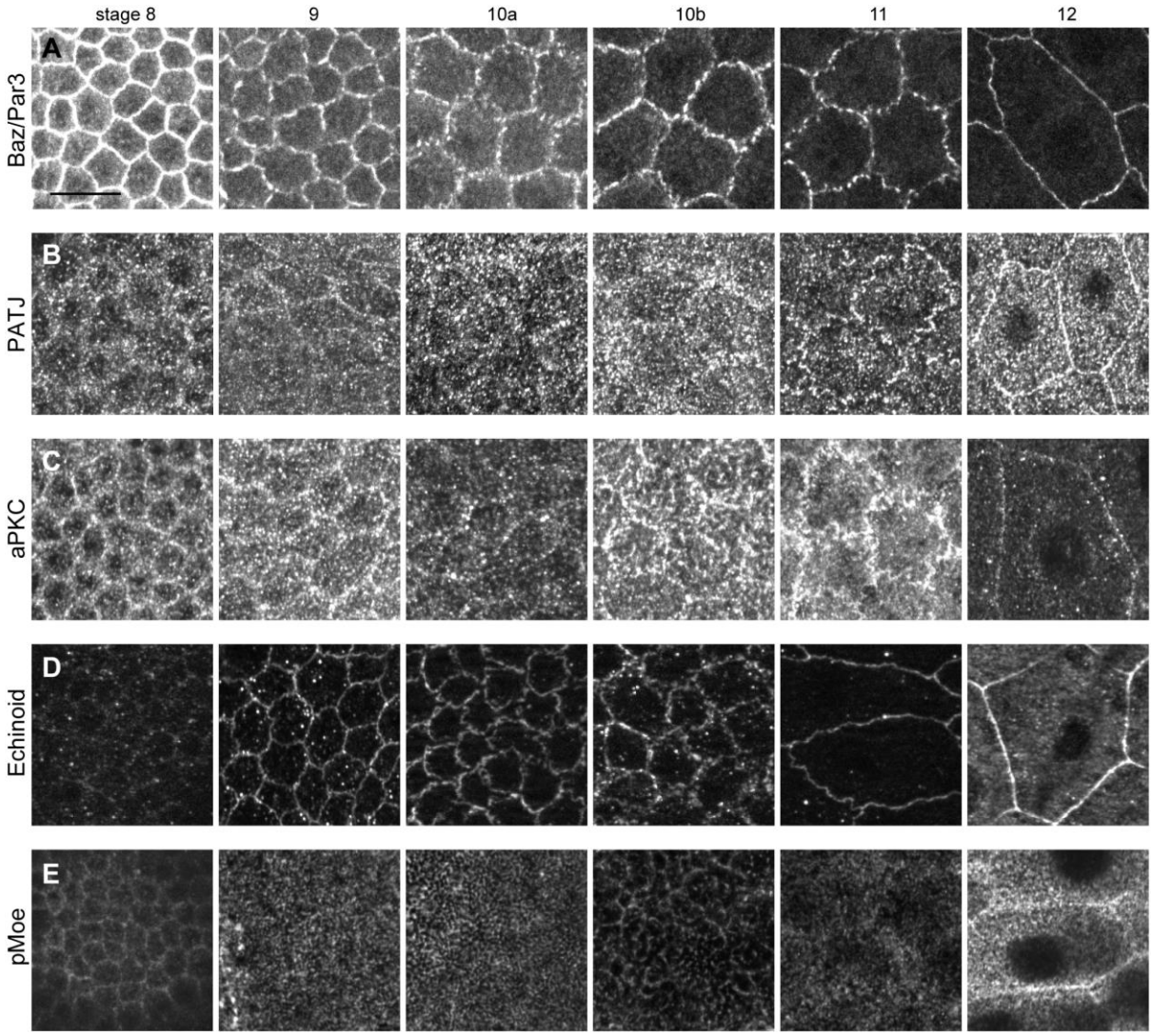

Figure S3. Ontogeny of apical-junctional stains in wild-type follicle cells. (A) Baz/Par3 displayed the same corrugations as Ecad in stages 9-10. These were also apparent in many of the MZ proteins in stage 11, including Patj (B) aPKC (C), and Echinoid (D), which, unlike Crb, remained at the MZ during stage 10, though sharpening in stage 11. pMoe, like Crb, was absent from the MZ in stage 9-10, returning in stage 11. Images of each stain taken with the same settings from the same slide, except Patj stage 8-9 9 and Echinoid stage 9. Scale bars: 10 μm.

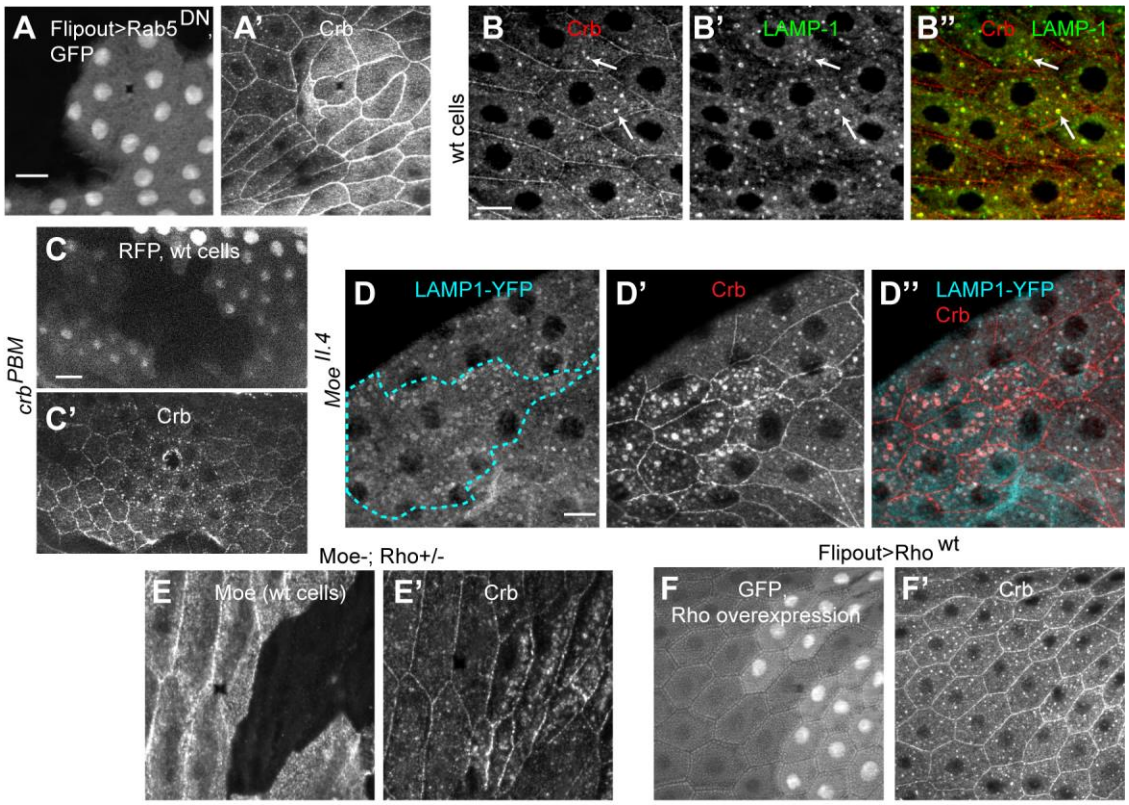

Figure S4. **Crb vesicles are endocytosed and degraded in stage 12 independently of Moe and of Rho.** (A) Crb vesicles were abrogated in Rab5^{DN}, stage 12. (B) Colocalization of Crb and the lysosomal marker Lamp-1 in wt follicle cells. (C) *crb*^{PBM} was excessively vesicular in stage 9. (D) The lysosomal marker Lamp-1 showed Crb was trafficked to the lysosome in Moe-depleted cells as in wt cells. (E,F) Moe-null effects on Crb are independent of Rho. (E) Rho depletion did not suppress Crb phenotype in Moe-null cells. (F) Rho overexpression did not phenocopy the Crb phenotype seen with Moe depletion. Images from stage 12 egg chambers, except C from stage 9. Scale bars: 10 µm.

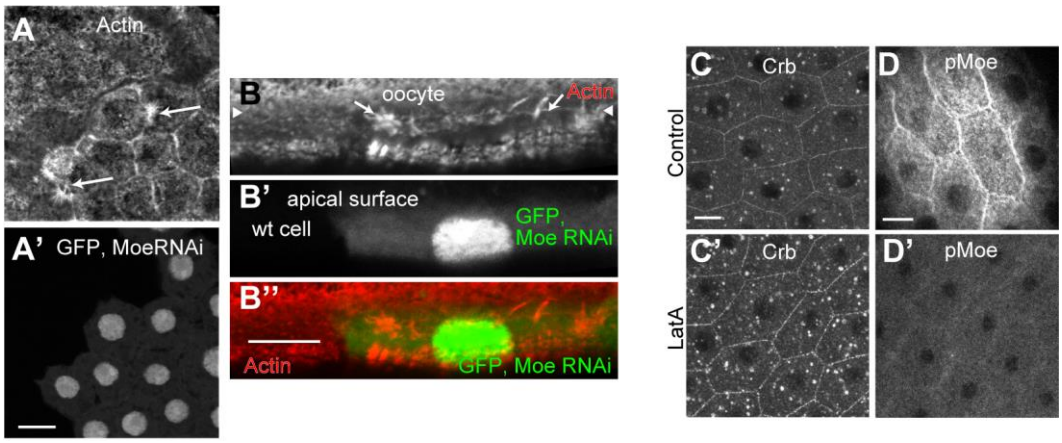

Figure S5. **Moe depletion causes actin defects associated with elevated Crb vesicles.** (A-B) Moe depletion caused aberrant actin structures (arrows) at the apical margins (A, apical section; B, cross-section; arrowheads in B mark apical surface of follicle cells). (C-C') Depolymerizing F-actin with latrunculin A caused buildup of MZ Crb and increase of vesicular Crb at stage 12, similar to Moe depletion; but also caused strong loss of pMoe (D-D'). All egg chambers stage 12. Scale bars: 10 µm.

Supplementary Table 1. Coimmunoprecipitation assays in *Drosophila* S2 cells of Crb with Moe or aPKC had negative results

IP bait	Co-IP targets
Flag-Moe$^{\Delta act}$	Myc-Crb^{i}, Myc-Crb$^{i\ JMM}$, Myc-Crb$^{i\ PBM}$
Flag-Moe^{T559D}	Myc-Crb^{i}, Myc-Crb$^{i\ JMM}$, Myc-Crb$^{i\ PBM}$
Flag-Crb^{i}	Myc-Moe$^{\Delta act}$, Myc-Moe^{T559D}, endogenous Moe, aPKC-GFP, endogenous aPKC
Flag-Crb$^{i\ JMM}$	Myc-Moe$^{\Delta act}$, Myc-Moe^{T559D}, endogenous Moe, aPKC-GFP, endogenous aPKC
Flag-Crb$^{i\ PBM}$	Myc-Moe$^{\Delta act}$, Myc-Moe^{T559D}, endogenous Moe, aPKC-GFP, endogenous aPKC
Flag-Crb$^{i\ T6AT9A}$	Myc-Moe$^{\Delta act}$, Myc-Moe^{T559D}, endogenous Moe, aPKC-GFP, endogenous aPKC
Flag-Crb$^{i\ T6DT9D}$	Myc-Moe$^{\Delta act}$, Myc-Moe^{T559D}, endogenous Moe, aPKC-GFP, endogenous aPKC
Myc-Moe$^{\Delta act}$	Flag-Crb^{i}, Flag-Crb$^{i\ JMM}$, Flag-Crb$^{i\ PBM}$, Flag-Crb$^{i\ T6AT9A}$, Flag-Crb$^{i\ T6DT9D}$
Myc-Moe^{T559D}	Flag-Crb^{i}, Flag-Crb$^{i\ JMM}$, Flag-Crb$^{i\ PBM}$, Flag-Crb$^{i\ T6AT9A}$, Flag-Crb$^{i\ T6DT9D}$
Myc-Crb^{i}	Flag-Moe$^{\Delta act}$, Flag-Moe^{T559D}, endogenous Moe, aPKC-GFP, endogenous aPKC
Myc-Crb$^{i\ JMM}$	Flag-Moe$^{\Delta act}$, Flag-Moe^{T559D}, endogenous Moe, aPKC-GFP, endogenous aPKC
Myc-Crb$^{i\ PBM}$	Flag-Moe$^{\Delta act}$, Flag-Moe^{T559D}, endogenous Moe, aPKC-GFP, endogenous aPKC

In all cases, target proteins were detected in lysates and IPs were strong, but in no case was a Co-IP seen above levels of negative controls. Flag IPs were performed as in Neisch et al. (2010), using Sigma Flag beads; Myc IPs were performed by labeling protein G beads with mouse anti-Myc for 2-12 hours. Myc-Crb^{i} constructs gift of D. Pan; Flag-Crb^{i} constructs created by C. Horth, based on Myc-Crb^{i}.