

Supporting Information

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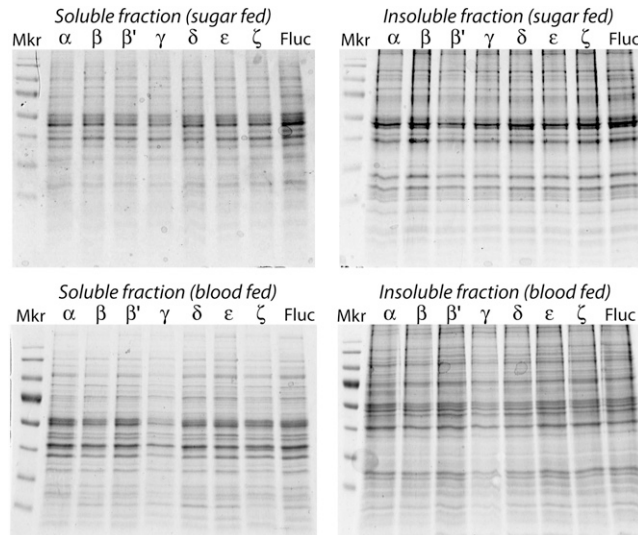


Fig. S1. Midgut protein synthesis is not affected by decreased coatomer protein I (COPI) coatomer protein expression in sugar- and blood-fed mosquitoes. (*Upper*) Denaturing SDS/PAGE analysis of soluble and insoluble proteins obtained from the midguts of sugar-fed mosquitoes injected 3 d earlier with 400 ng indicated dsRNA. One midgut equivalent of the protein extracts was loaded in each lane, and the gel was stained with Gel Code Blue. (*Lower*) Denaturing SDS/PAGE analysis of soluble and insoluble proteins in midgut epithelium cell extracts (no food bolus) of blood-fed mosquitoes [24 h postblood meal (PBM)] injected 4 d earlier with 400 ng indicated dsRNA. One midgut equivalent of the protein extracts was loaded in each lane.

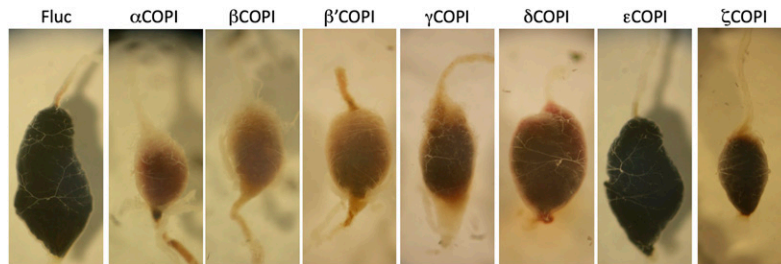


Fig. S2. Midguts from COPI dsRNA-injected mosquitoes contain less blood and lack a defined peritrophic matrix. Photographs of representative midguts removed from dsRNA-injected (400 ng) mosquitoes at 24 h PBM. The decreased blood in the midgut at 24 h PBM in COPI-deficient mosquitoes (except ϵ COPI) is caused by premature defecation. The α COPI dsRNA midgut is the same as in Fig. 4A.

Table S1. Mosquito feeding and RNAi knockdown efficiencies in dsRNA-injected mosquitoes

dsRNA injected	Blood ingested* relative to Fluc (%)	RNAi [†] (100 ng)		RNAi [†] (400 ng)	
		N [‡]	KD (%)	N [‡]	KD (%)
αCOPI	95.8	8/10	86.1	10/10	92.2
βCOPI	95.5	9/10	87.8	10/10	93.8
β'COPI	91.1	9/10	87.4	10/10	92.8
γCOPI	84.0	9/10	88.0	10/10	93.3
δCOPI	88.8	9/10	87.3	10/10	92.8
εCOPI	85.2	9/10	86.2	10/10	91.3
ζCOPI	86.2	8/10	86.7	10/10	93.2

*The relative amount of blood ingested by COPI dsRNA-injected mosquitoes was determined at 30 min PBM using the BSA quantitation assay described in ref. 1. Note that some COPI dsRNA-injected mosquitoes may have initiated premature defecation (Fig. 4B).

[†]Knockdown (KD) efficiency of each COPI subunit was determined compared with Fluc dsRNA-injected mosquitoes.

[‡]The left number indicates mosquitoes with >80% KD, and the right number shows the total number of injected mosquitoes examined.

1. Isoe J, Rascón AA Jr., Kunz S, Miesfeld RL (2009) Molecular genetic analysis of midgut serine proteases in *Aedes aegypti* mosquitoes. *Insect Biochem Mol Biol* 39:903–912.

Table S2. Statistical analysis of mortality over a 7-d period postinjection using 100 ng COPI dsRNA or 400 ng Fluc dsRNA

dsRNA injected	Blood-fed COPI vs. blood-fed Fluc	Blood-fed COPI vs. sugar-fed COPI	Blood-fed β'COPI vs. blood-fed COPI
αCOPI	$P < 0.0001$	NS	$P < 0.0001$
βCOPI	$P < 0.0001$	$P < 0.05$	$P < 0.0001$
β'COPI	$P < 0.0001$	$P < 0.0001$	—
γCOPI	$P < 0.0001$	$P < 0.001$	$P < 0.01$
δCOPI	$P < 0.0001$	$P < 0.001$	$P < 0.001$
εCOPI	NS	NS	$P < 0.0001$
ζCOPI	$P < 0.0001$	$P < 0.001$	$P < 0.01$

At 400 ng dsRNA injection, all pair-wise comparison showed a significant difference ($P < 0.0001$) except for εCOPI. NS, not significant.

