Supporting Information

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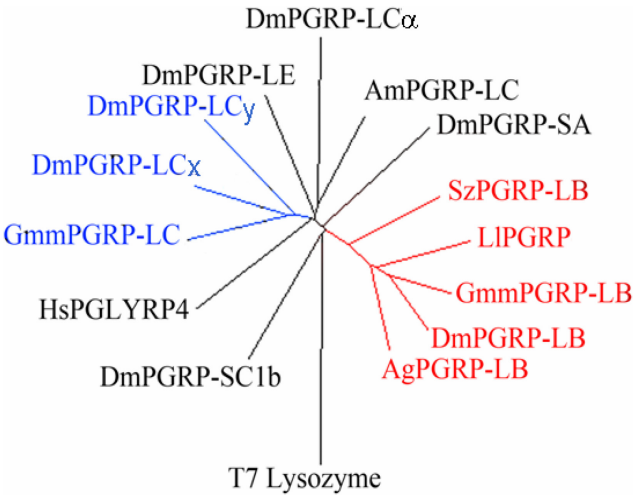

Fig. S1. Phylogenic analysis of the PGRPs using T7 *N*-acetylmuramoyl-L-alanine amidase (T7 lysozyme) (P00806) as outroot. *G. m. morsitans* (GmmPGRP-LC: DQ307161 and GmmPGRP-LB: DQ307160), *D. melanogaster* (DmPGRP-LCx: NM_168324; DmPGRP-LCa:NM_140041; DmPGRP-LCy:NM_206308; DmPGRP-LE:AF313391; DmPGRP-SA:AF207541; DmPGRP-SC1b:AF207542 and DmPGRP-LB:NM_169393), *Apis mellifera* (AmPGRP-LC:XM_392452), *Homo sapiens* (HsPGRP4:AK292203), *Anopheles gambiae* (AgPGRP-LB:EAA01800) and *S. zeamais* (SzPGRP-LB:CN612423), and *Lutzomyia longipalpis* (LlPGRP:EU124614). Tree generation was done by MEGA3.1, and bootstrap analysis was performed for 5,000 replicates. PGRP-LC and PGRP-LB clusters are indicated in blue and red, respectively.

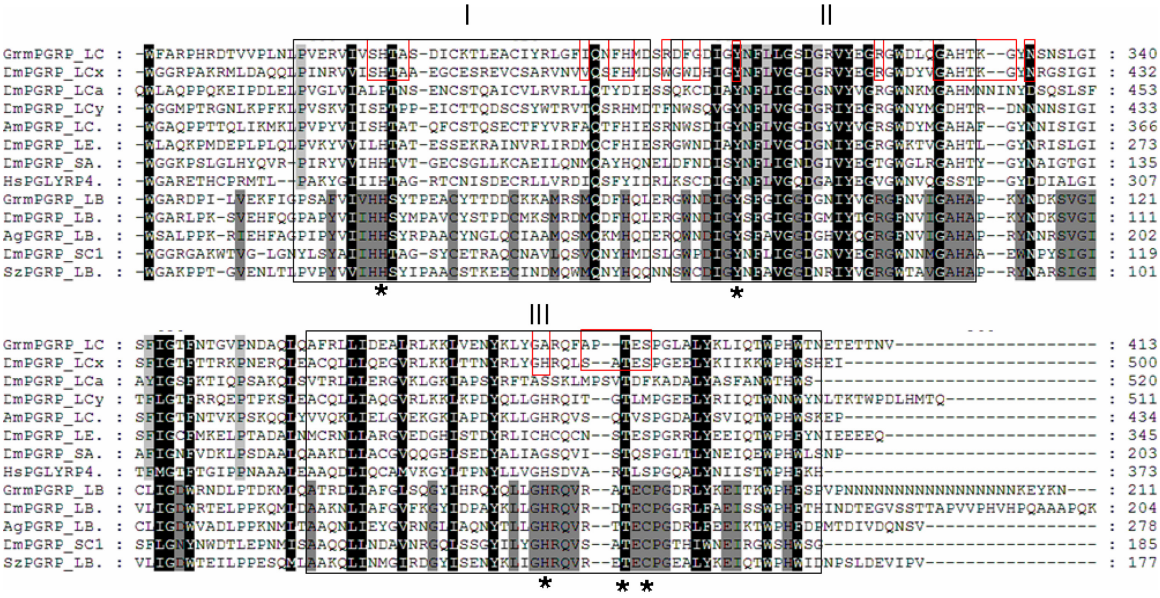

Fig. S2. Alignment of conserved PGRP domains from *G. m. morsitans* (GmmPGRP-LC: DQ307161, and GmmPGRP-LB: DQ307160) and PGRPs from Fig. S1 including *D. melanogaster* (DmPGRP-LCx; DmPGRP-LCa; DmPGRP-LCy; DmPGRP-LE; DmPGRP-SA; DmPGRP-SC1b; and DmPGRP-LB), *Apis mellifera* (AmPGRP-LC), *Homo sapiens* (HsPGRP43), *An. gambiae* (AgPGRP-LB), and *S. zeamais* (SzPGRP-LB). Three conserved PGRP domains are boxed in black and numbered. The highly conserved residues among all PGRP proteins are shown in black, conserved residues present in the recognition PGRPs and catalytic PGRPs are shown in light gray and dark gray shadow, respectively. Residues interacting with PGN are boxed in red. Residues required for amidase activity are indicated by a star.

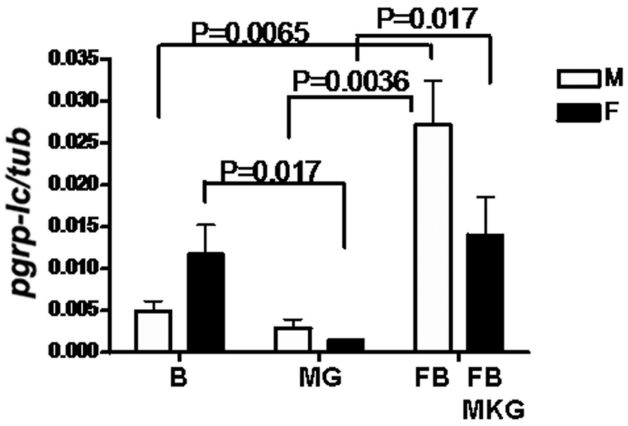

Fig. S3. Tissue specific expression of *pgrp-lc*. *pgrp-lc* is preferentially expressed in the fat body fraction of both male and female adults. In females, *pgrp-lc* levels are significantly higher in the bacteriome (B) than in midgut (MG). *pgrp-lc* expression level was normalized by host *β-tubulin*.

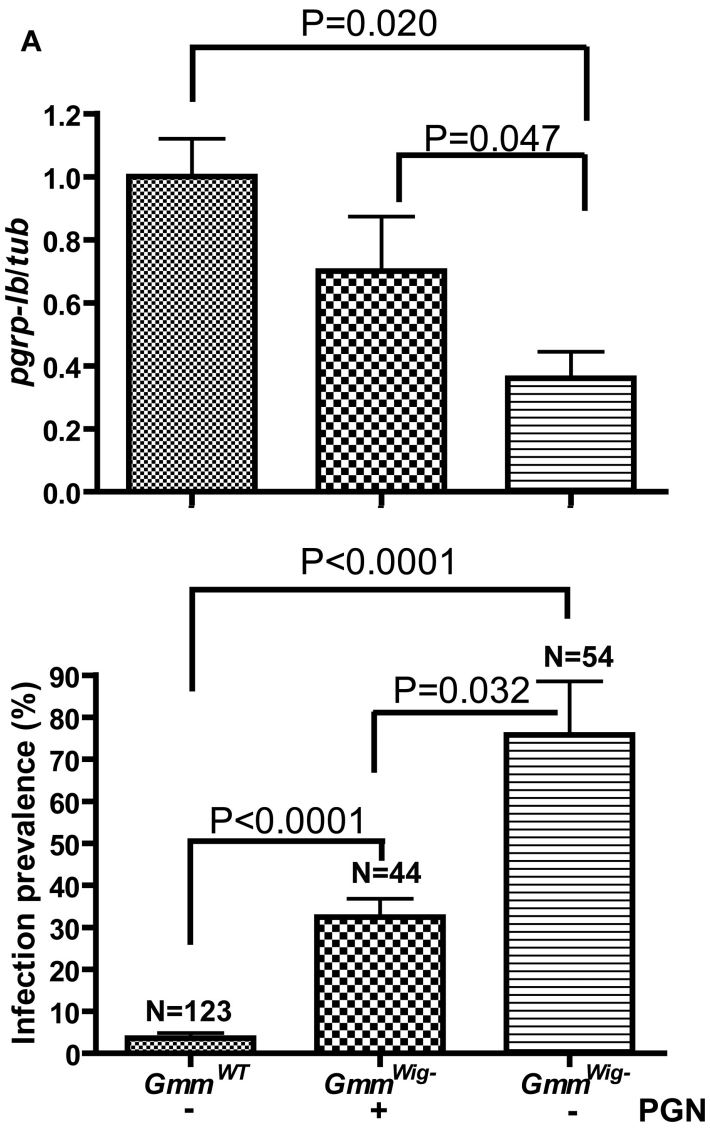

Fig. S4. The effect of PGN supplementation of the blood meal diet on bacteriome *pgrp-lb* levels (*A*) and on parasite infection prevalence (*B*) in aposymbiotic Gmm^{Wig-} flies. (*A*) Groups of newly enclosed Gmm^{Wig-} were given either normal blood meals or blood meals supplemented with PGN (50 μg/mL) (Sigma). RNA was prepared from the dissected bacteriomes of 8-day-old Gmm^{Wig-} and corresponding normal blood receiving Gmm^{WT} adults. PGN provisioning resulted in a significant increase *in* the *pgrp-lb* levels of Gmm^{Wig-} flies than normal bloodmeal receiving Gmm^{Wig} *flies.* The *pgrp-lb* levels were normalized by host *tubulin* and presented as fold change relative to wild type flies. Error bars, standard error ($n = 5$). (*B*) Groups of flies that received the same treatments as described above (with and without PGN supplementation) were given 1 infectious blood meal containing *T. b. rhodesiense* (2×10^6/mL) on day 8. Flies were dissected and midguts were microscopically examined for parasite infections 14 days after infection acquisition. *P* values indicate the level of significance between treatments. Results indicate that Gmm^{Wig-} flies, which had higher *pgrp-lb* levels at the time of parasite acquisition as a result of PGN supplementation, are significantly more resistant to parasite infections that their Gmm^{Wig-} counterparts maintained on normal bloodmeal diets.

Table S1. Primer sets used for dsRNA preparation and qRT-PCR reactions

Primer name	Primer pair sequence	
	F, Forward	R, Reverse
dsLC	F: 5′ TAATACGACTCACTATAGGGACTTATGCCGCAACATGAACA 3′	R: 5′ TAATACGACTCACTATAGGGACTTCCCAGCCTCTACCTTCG 3′
dsLB	F: 5′ TAATACGACTCACTATAGGGCAACAACAACCCAAAAGG 3′	R: 5′ TAATACGACTCACTATAGGGGAGTTGGTACTGCCGATGT 3′
dsGFP	F: 5′ TAATACGACTCACTATAGGGTCAGTGGAGAGGGTGAAG 3′	R: 5′ TAATACGACTCACTATAGGCTAGTTGAACGGATCCATC 3′
qPGRP-LC*	F: 5′ CCAAGAGCAACCGCAATAAT 3′	R: 5′ AAATAAAAGAGCCGCAACGA 3′
qPGRP-LB*	F: 5′ TCAATGATGGGTTGGATGAA 3′	R: 5′ GAACGATCACAAACGCAGAA 3′
qGmmattA	F: 5′ ATGCCAACCTCTTCAACGAC 3′	R: 5′ CGTAACCTAAGCCTCCACCA 3′
qGmmtub-β[§]	F: 5′ CCATTCCCACGTCTTCACTT 3′	R: 5′ GACCATGACGTGGATCACAG 3′
qPGRP-LC-2[†]	F: 5′ GGCGCCCACACAAAAGGATA 3′	R: 5′ CAATTGCGCATCGTTCGGTA 3′
qGffPGRP-LB[‡]	F: 5′ GATCATTCATCATTCGTA 3′	R: 5′ ATCCCCACCTATCCCAA 3′
qPGRP-LB-5[†]	F: 5′ GATGTAAGCAAACGCCGC 3′	R: 5′ CAACACAAAAGCACAACATCCA 3′
qthiC *Wigglesworthia*[§]	F: 5′ AAGTTATGATAGAAGGACCAGGAC 3′	R: 5′ CCCGGAGCAATATCAGTAGTTAG 3′
qchi *Sodalis*	F: 5′ TGGGGACAGTACGATGGCAGAGC 3′	R: 5′ TCATAGGCGGTCGGGGATAATTGCG 3′

*Primer set used for qRT-PCR analysis in dsRNA treated flies.
[†]Primer set used to test gene silencing efficacy of dsRNA treatment.
[‡]Primer set used for qRT-PCR analysis of *G. f. fuscipes*.
[§]The same primer pair is used for *Wigglesworthia* density analysis in *G. m. morsitans* and *G. f. fuscipes*.