Supplemental data

Supplementary Table 1: Primer sequences used in the present study.

Primer	Sequence (5' - 3')
Primers used in RACE reactions	
RhoprGpat1_R1	TAGCCTCGGTACGCGATTTG
RhoprGpat1_R2	CGTTGGGTCGGTCATCGTT
RhoprGpat1_R3	GATAATGAAACCCTTTGAAGGTTA
RhoprGpat1_R4	CGATCGGTGCCCTAATATTGT
RhoprGpat1_R5	TTACGTTTTCATCTTGTAAGA
GeneRacer RNA Oligo	CGACUGGAGCACGAGGACACUGACAUGGACUGAAGGAGUAGAAA
Primers used in qPCR reactions	
RhoprGpat1_F	TTGTCTGCGACGAACAAGGA
RhoprGpat1_R	AACCGTCGGGTTGCTTCTCT
RhoprGpat4_F	GGGCGATTGTTTGCGATGTA
RhoprGpat4_R	ACGGCTTTAACCCTGTTAGCAA
RhoprAcc_F	TGGGCTGGAACCGTAGTTGCG
RhoprAcc_R	TGCGGGATCGGCTGGAAGTTGT
RhoprAcsl1_F	GTGGTTAAAAGCTGGGCTGT
RhoprAcsl1_R	CCCCAAGTTATCAAATCATCCA
RhoprAcsl2_F	TAGCCGTAATGGCAGAACGC
RhoprAcsl2_R	CCATGGGCAGCTAATTCTGC
RhoprAcbp1_F	GGGGACTGTAATACGAGCAA
RhoprAcbp1_R	TTCAATCCATAAGATGCAATCA
RhoprDgat_F	ATGCAACTGGCATAGCTCCG

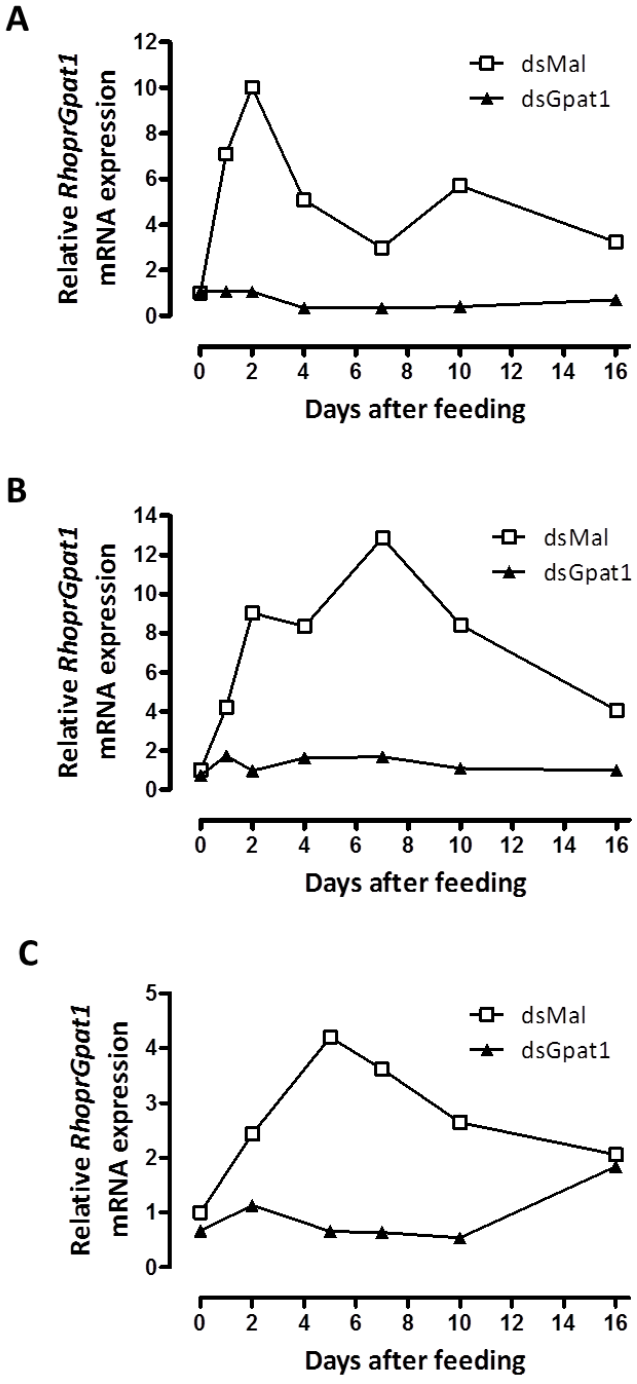
RhoprDgat_R	GCGATTGGCTTTCCAACTACAG
RhoprCpt1_F	AAACACCACATGGCCAAACT
RhoprCpt1_R	GAAACGCCGTATCCATCATC
Rhopr18S_F	TCGGCCAACAAAAGTACACA
Rhopr18S_R	TGTCGGTGTAACTGGCATGT
Primers used for dsRNA synthesis	
RhoprGpat1_RNAi_F	TAATACGACTCACTATAGGGTACTGAGAGCTGACTGGTGCGCCAA
RhoprGpat1_RNAi_R	TAATACGACTCACTATAGGGTACTACATCCACACTGTCCCCGCTG
T7 minimal	TAATACGACTCACTATAGG

Supplementary Table 2: GPAT sequences used in phylogenetic analyses.

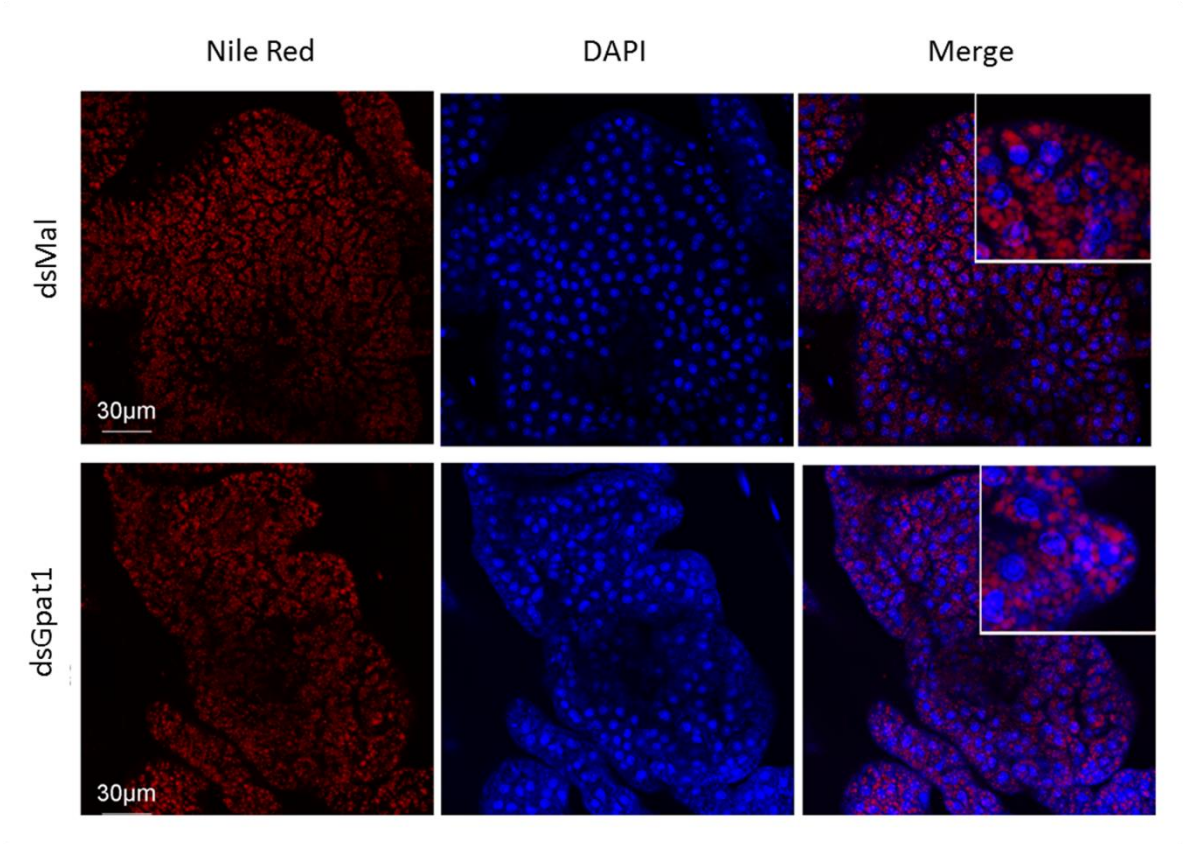
Protein	[a]Access number	Organism
AcypiGPAT1	XP_008187136	*Acyrthosiphon pisum*
AcypiGPAT4	XP_008178645	*Acyrthosiphon pisum*
AedaeGPAT1	XP_001658107	*Aedes aegypti*
AedaeGPAT4	XP_001656437	*Aedes aegypti*
AnogaGPAT1	XP_313470	*Anopheles gambiae*
AnogaGPAT4	XP_550721	*Anopheles gambiae*
ApimeGPAT1	XP_006563437	*Apis mellifera*
ApimeGPAT4	XP_006561095	*Apis mellifera*
BommoGPAT1	XP_004933052	*Bombyx mori*
BommoGPAT4	XP_012544997	*Bombyx mori*
CamflGPAT1	XP_011251577	*Camponotus floridanus*
CamflGPAT4	XP_011268666	*Camponotus floridanus*
DanreGPAT1	XP_009305069	*Danio rerio*
DanreGPAT2	NP_001082849	*Danio rerio*
DanreGPAT3	NP_001002685	*Danio rerio*
DanreGPAT4	NP_001035339	*Danio rerio*
DromeGPAT1	NP_651597	*Drosophila melanogaster*
DromeGPAT3	NP_001286818	*Drosophila melanogaster*
DromeGPAT4	NP_726415	*Drosophila melanogaster*
HomsaGPAT1	NP_065969	*Homo sapiens*
HomsaGPAT2	NP_997211	*Homo sapiens*
HomsaGPAT3	NP_116106	*Homo sapiens*
HomsaGPAT4	NP_848934	*Homo sapiens*

MusmuGPAT1	NP_032175	*Mus musculus*
MusmuGPAT2	NP_001074558	*Mus musculus*
MusmuGPAT3	NP_766303	*Mus musculus*
MusmuGPAT4	NP_061213	*Mus musculus*
NasviGPAT1	XP_008214603	*Nasonia vitripennis*
NasviGPAT4	XP_003424470	*Nasonia vitripennis*
SacceGpt2p	NP_012993	*Saccharomyces cerevisiae*
SacceSct1p	NP_009542	*Saccharomyces cerevisiae*
TricaGPAT1	XP_967684	*Tribolium castaneum*
TricaGPAT4	XP_008200644	*Tribolium castaneum*
XenlaGPAT1	NP_001091387	*Xenopus laevis*
XenlaGPAT3	NP_001087492	*Xenopus laevis*
XenlaGPAT4	NP_001085270	*Xenopus laevis*

[a]Access number at NCBI database.



Supplementary Figure 1: Persistence of *RhoprGpat1* knockdown.
Fasted adult females were injected with dsRNA for *RhoprGpat1* or *Mal* (control) genes. Insects were fed on the third day after injection. (A) Anterior midgut, (B) posterior midgut and (C) fat body were obtained from adult females before (day 0) or on different days after feeding. Differences between cDNA levels were determined by qPCR analysis. mRNA expression levels are relative to unfed dsMal-treated insects, set as 1.0. The results represent the means of 2 independent experiments.



Supplementary Figure 2: Lipid droplets morphology in unfed insects.
Nile red stained-lipid droplets and DAPI-stained nuclei were imaged from optical sections of fat bodies from control and *RhoprGpat1*-silenced females before feeding. Representative images are shown. Scale bars = 30 µm.