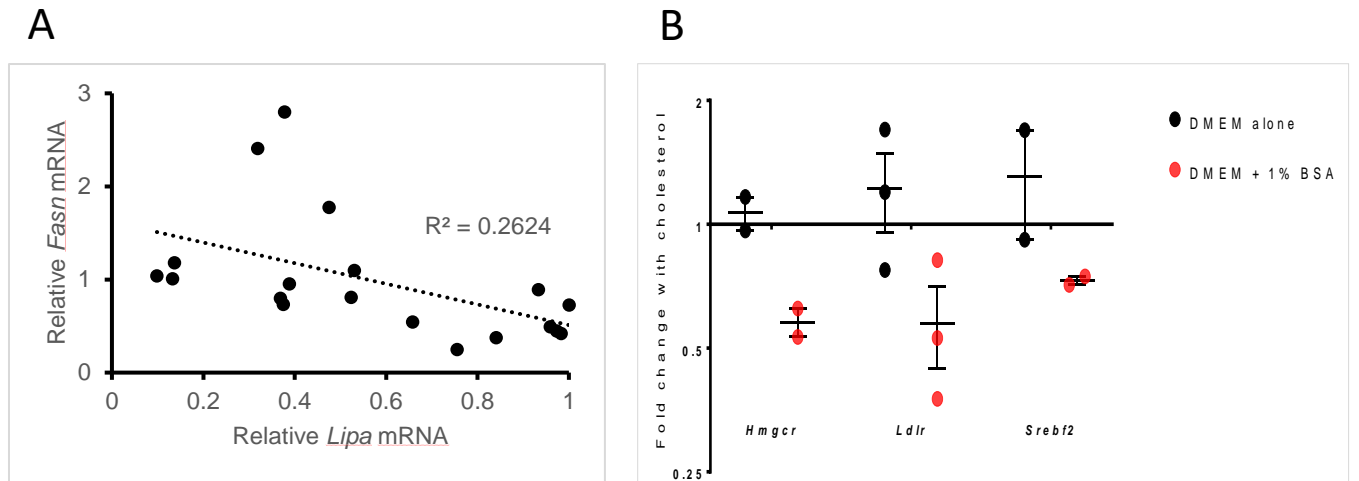


Supplemental figure 1: Impact of *Lipa* Knockdown in cultured adipocytes.

(A-B) Impact of *Lipa* inhibition on adipocyte gene expression. mRNA encoding major adipocyte lipases (A) or lipid storage genes (B) assessed by RT-qPCR.

(C-D) Stable *Lipa* inhibition in preadipocytes (D0) or differentiated fat cells (D7) after puromycin selection. (D) Adipose differentiation is unaffected by *Lipa* inhibition. mRNA was extracted from independently generated sh-knock-down or parental cells in the fully differentiated state (D7). For each gene, mRNA levels in the parental 3T3-L1 undifferentiated cells were arbitrary set to 1. Western blot analysis of cell protein contents for autophagic effectors (E), or Lysosomal chaperones (F). Values are means +/- sem of 5 independent cell preparations in each group.

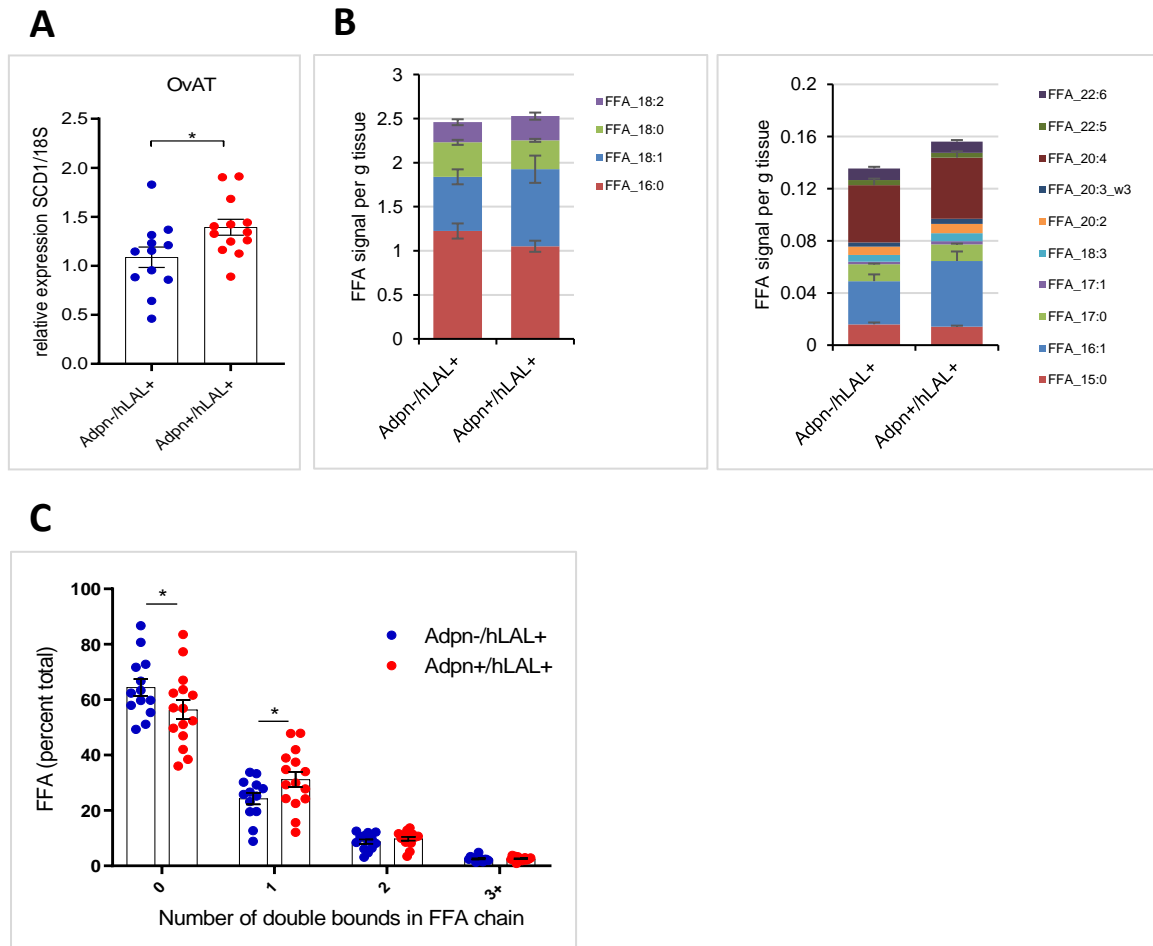


Supplemental figure 2:

A. Correlation between *Lipa* expression and *Fasn* in differentiated cells with different degrees of *Lipa* inhibition.

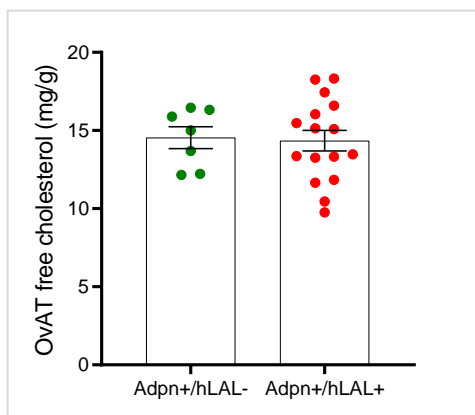
B. Down-regulation of *SREPB2* target genes after 1 hour of incubation with exogenous cholesterol. Cholesterol was supplied as an ethanol solution (1mg/ml final concentration) in DMEM containing or not 1% of fatty acid-free bovine serum albumin. Down regulation is seen only when a protein acceptor is present in the medium. 2-3 independent determinations were performed on control 3T3-L1 cell batches.

Supplemental figure 2



Supplemental figure 3: Impact of Adipose LAL overexpression on tissue free fatty acid profiles. (A) *Scd1* fatty acid desaturase mRNA levels in OvAT. (B) Free fatty acid profiles were quantified by GC/MS after extraction with isooctane and *derivatization with* pentafluorobenzyl bromide. 13 individual fatty acid species that could be detected in OvAT adipose tissue extracts. (C) Changes in the proportion of monounsaturated versus saturated fatty acid ratios were found in LAL overexpressing adipose tissue. * indicates a significant difference by Student's t test.

Supplemental figure 3



Supplemental figure 4: Free cholesterol contents in white (OvAT) adipose tissue.

Supplemental figure 4