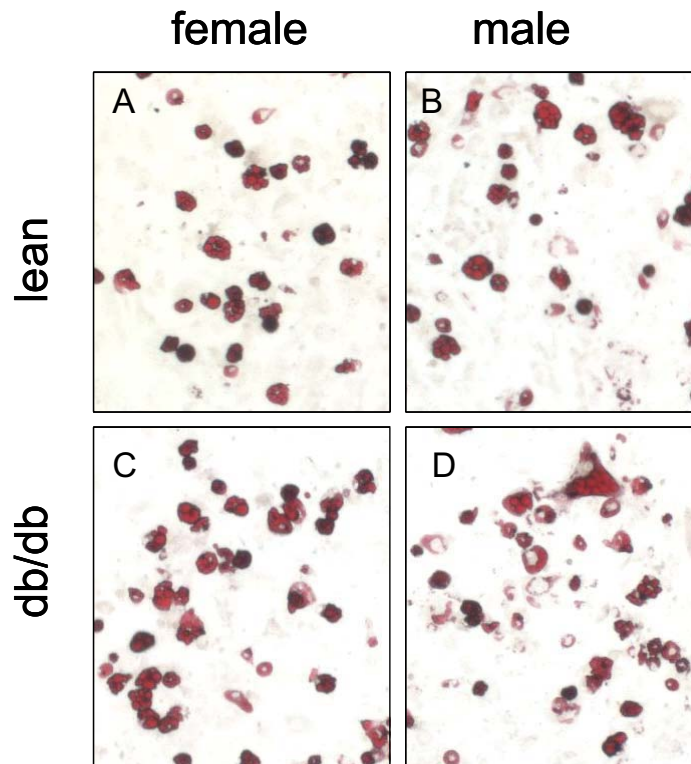
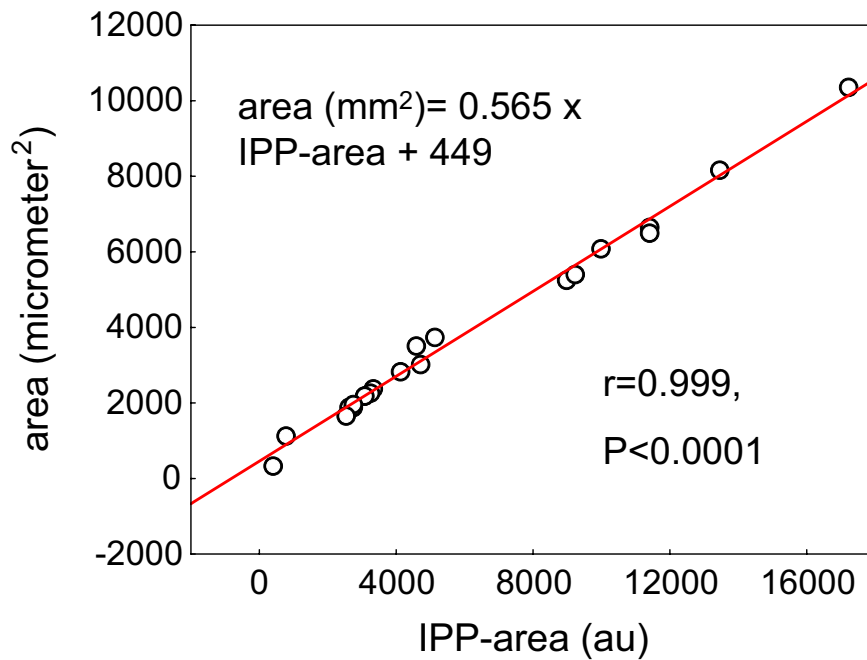


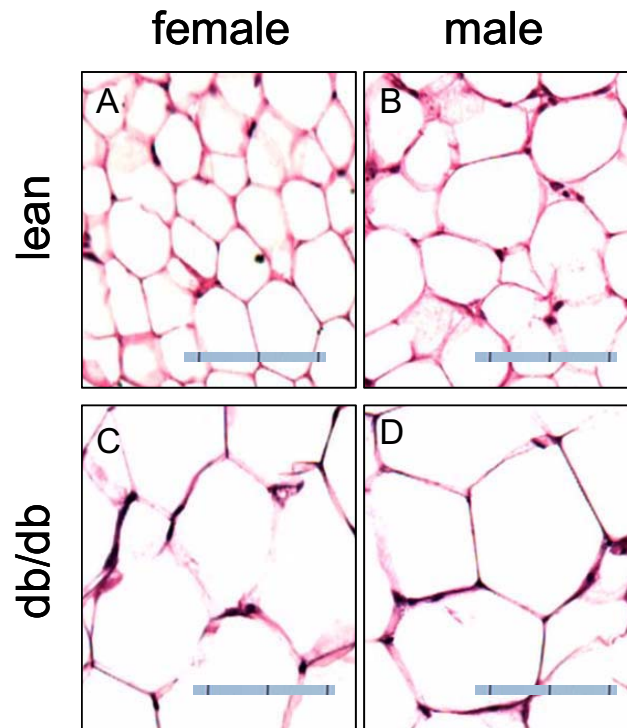
## Supplemental Data



**Supplemental Figure 1. Rosiglitazone-induced *in vitro* adipocyte differentiation of cultured SVCs.** Inguinal adipose tissue stromal vascular cells were isolated from the wild type and *Lepr<sup>db/db</sup>* male and female mice and cultured for 7-8 days as described in Materials and Methods. Confluent SVCs cultures were treated with a differentiation medium containing rosiglitazone, insulin and FBS for 3 days and followed by incubation in the same differentiation medium without rosiglitazone for additional 9 days. The differentiated cells were then fixed and stained for cellular lipids with oil-red-O. The overall oil-red-O staining in SVCs from the different donor mice were similar.



**Supplemental Figure 2. Correlation of the Image-Pro-Plus (IPP) readouts with the metric values of the cross-sectional areas of isolated adipocytes.** Cross-sectional areas of individual adipocytes were measured using the IPP program (IPP-area, X axis). Diameters of the same set of cells were also measured using 100x magnified micrometer ruler. The cross-sectional areas in metric units were then calculated based on the measured diameters (Y axis). The mathematical relationship between the metric values and the IPP values is:  $\text{area } (\mu\text{m}^2) = 0.565 \times \text{IPP-area} + 449$ . The correlation coefficient of the two sets of data is  $r=0.999$ ,  $p<0.0001$ .



**Supplemental Figure 3. Inguinal adipose tissue morphology of the wild type and *Lepr<sup>db/db</sup>* male and female mice** Hematoxylin-eosin staining of typical inguinal adipose tissues of 16 week-old wild type and *Lepr<sup>db/db</sup>* male and female mice.

**Supplemental Table 1: Metabolic and endocrine profiles of 12-week-old male**

**Ncr nude and C57BL/6 mice (Mean  $\pm$  SD)**

	<b>Ncr nude</b>	<b>C57BL/6</b>	<b>p (t-test)</b>
<b>Body weight (gm)</b>	25.1 $\pm$ 1.9	25.2 $\pm$ 1.6	0.87
<b>Body length (cm)</b>	9.1 $\pm$ 0.2	9.4 $\pm$ 0.2	0.043*
<b>WAT<sup>a</sup> (gm)</b>	1.4 $\pm$ 0.4	1.2 $\pm$ 0.3	0.31
<b>BAT (mg)</b>	150 $\pm$ 39	115 $\pm$ 50	0.21
<b>Glucose<sup>b</sup> (mg/dl)</b>	147 $\pm$ 16	129 $\pm$ 9	0.046*
<b>Insulin<sup>b</sup> (ng/ml)</b>	2.4 $\pm$ 0.8	1.5 $\pm$ 1.1	0.18
<b>Leptin<sup>b</sup> (ng/ml)</b>	4.9 $\pm$ 1.1	5.37 $\pm$ 3.3	0.79
<b>Corticosteron<sup>b</sup> (ng/ml)</b>	94 $\pm$ 39	25.8 $\pm$ 18.8	0.013*
<b>TSH<sup>b</sup> (ng/ml)</b>	1.37 $\pm$ 0.34	1.69 $\pm$ 0.18	0.085

<sup>a</sup>WAT= total white adipose tissue mass, which is the sum of inguinal, epididymal, retroperitoneal and mesenteric fat mass..

<sup>b</sup>Blood samples were collected by cardiac puncture in the basal state (after 5-hr food deprivation).

\* indicates  $p < 0.05$ , Ncr nude mice vs. C57BL/6 mice in two tailed t-test, n=5.