

## Supplementary Materials: Insulin Production and Resistance in Different Models of Diet-Induced Obesity and Metabolic Syndrome

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Table S1. List of primers used in this study.

Gene	Sense 5'–3'	Antisense 5'–3'
<i>Insulin-1</i>	GGGGAACGTGGTTTCTTCTAC	GAGTGGTGGACTCAGTTGCAG
<i>Glucagon</i>	GAACGCCAGATCATTCCCA	GCAATGTTGTTCCGGTTCCT
<i>Pik3ca</i>	GTCACCATCAAGCATGAACTGT	GGTGCCTACTGGCTCAATTAC
<i>Fasn</i>	TCGAGACACATCGTTTGAGC	CCCAGAGGGTGGTTGTTAGA
<i>Cyp2e1</i>	CCTACATGGATGCTGTGGTG	CTGGAAACTCATGGCTGTCA
<i>Ppara</i>	GTCATCACAGACACCCTCTC	CAGCTTCGATCACACTTGTC
<i>Aco1</i>	ATGGCAGTCCGGAGAATACCC	CCTCATAACGCTGGCTTCGAGT
$\beta$ -actin	GAAATCGTGCCTGACATTAAGAG	GCGGCAGTGGCCATCTC
<i>Ubc</i>	CACCAAGAAGGTCAAACAGGAA	AAGACACCTCCCCATCAAACC

*Pik3ca*: phosphoinositide-3-kinase, catalytic,  $\alpha$  polypeptide, *Fasn*: fatty acid synthase, *Ubc*: ubiquitin c.

Table S2. List of antibodies used in this study.

Antibodies	Species	Reference	Dilution for WB
pERK1/2	Rabbit	Cell Signaling	1:800
tERK1/2	Rabbit	Cell Signaling	1:1000
I $\kappa$ B1 $\alpha$	Rabbit	Abcam	1:10,000
$\beta$ -actin	Mouse	Sigma Aldrich	1:5000

WB: Western blot.

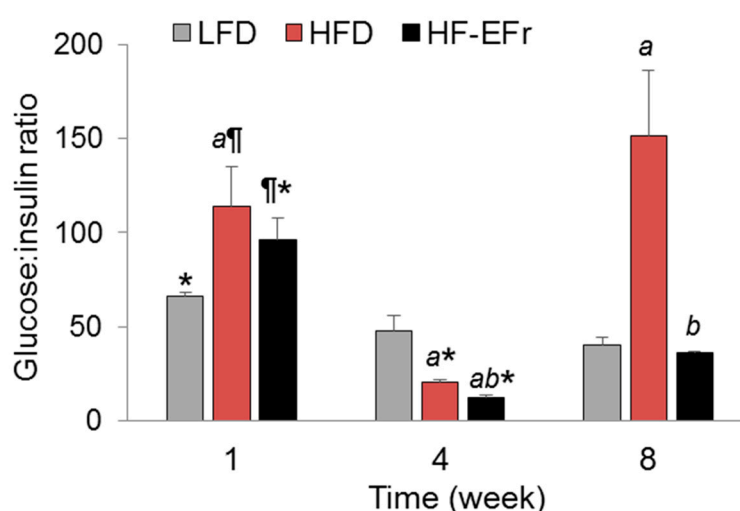
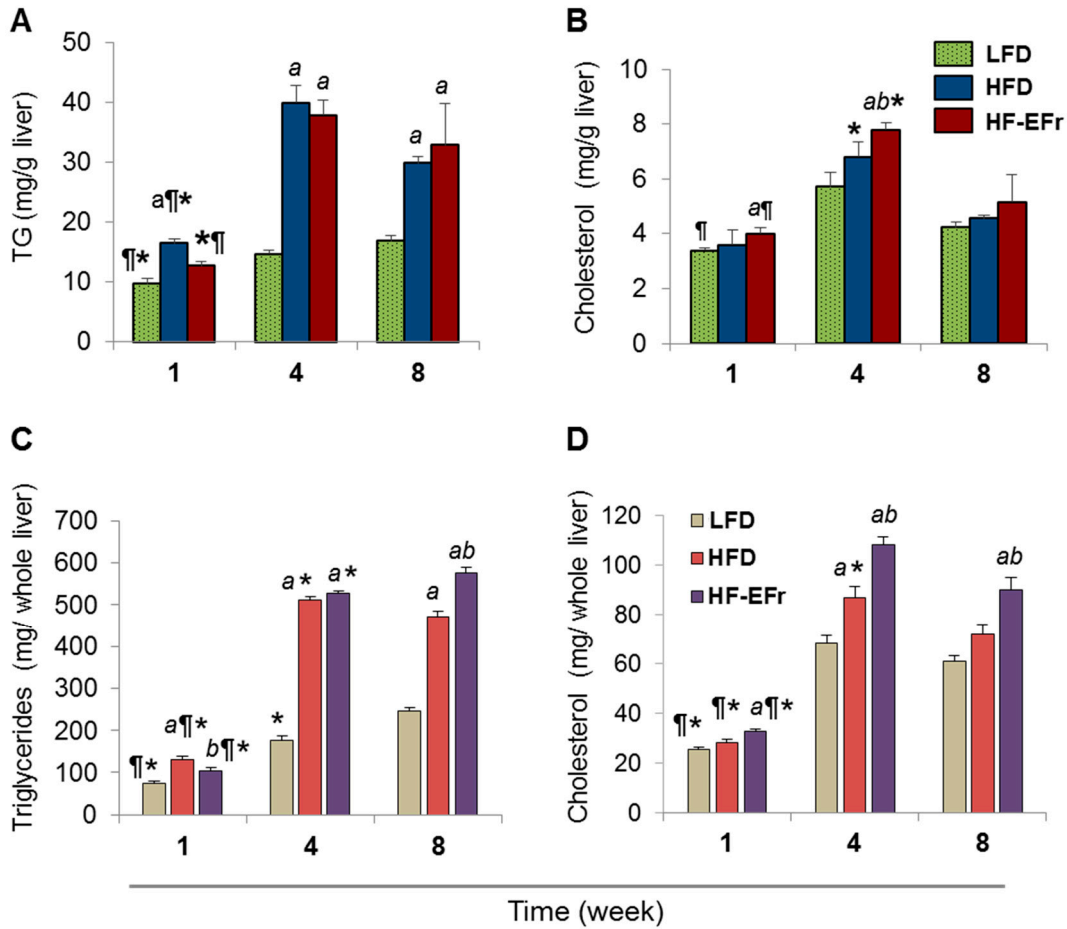
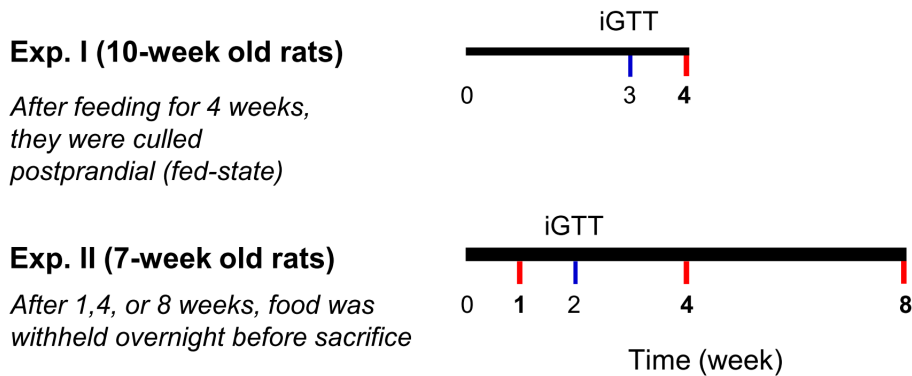


Figure S1. Fasting glucose-to-insulin ratio. <sup>a</sup> indicates a significant difference versus the LFD, <sup>b</sup> significant difference versus the HFD, <sup>¶</sup> indicates a significant difference versus Week 4 of within each group, and \* significant difference versus Week 8 of within each group. LFD: low-fat-diet, HFD: high-fat-diet, HF-EFr: HFD + EtOH + Fructose.



**Figure S2.** Changes in the amount of hepatic triglycerides and cholesterol among the groups at each time point. Concentrations of (A) intrahepatic triglyceride and (B) cholesterol per gram liver. Amount of total triglycerides(C) and cholesterol (D) per liver. <sup>a</sup> indicates a significant difference versus the LFD, <sup>b</sup> significant difference versus the HFD, ¶ indicates a significant difference versus Week 4 of within each group, and \* significant difference versus Week 8 of within each group. We then calculated the total liver triglycerides and cholesterol content according to this formula: total triglycerides or cholesterol = amount of TG in mg/g liver × liver weight (g).



**Figure S3.** Timeline of the experimental design shows short-term feeding (one week) and long-term feeding until Week 8.