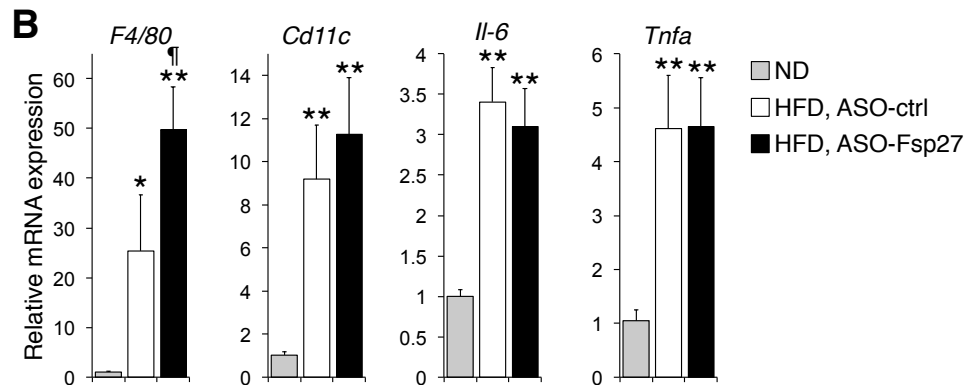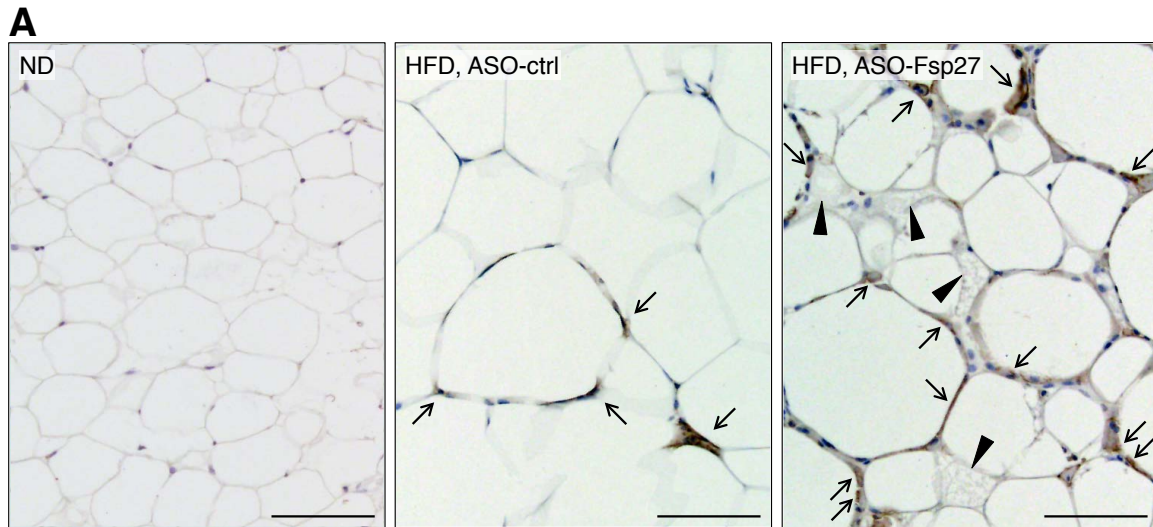Supplemental Information

Therapeutic silencing of *Fsp27* improves glycemic control
in mouse models of obesity and insulin resistance

Cédric Langhi[1], Noemí Arias[1], Ananthi Rajamoorthi[1], Jeannine Basta[2],
Richard G. Lee[3], and Ángel Baldán[1,4,5]

[1]Edward A. Doisy Department of Biochemistry & Molecular Biology, Saint Louis University, Saint

Louis, MO 63104; [2]Department of Internal Medicine, Saint Louis University, Saint Louis, MO 63104;

[3]Cardiovascular Group, Antisense Drug Discovery, Ionis Pharmaceuticals, Carlsbad, CA 92010; [4]Center

for Cardiovascular Research, and [5]Liver Center, Saint Louis University, Saint Louis, MO 63104
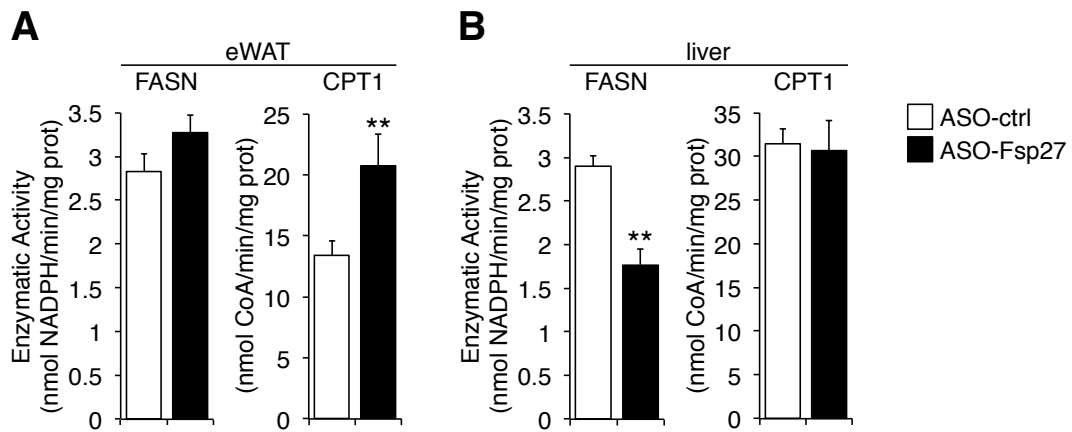
Supplemental Figures S1, S2, S3, S4
Supplemental Table S1

Supplemental Figure S1. Increased infiltration of macrophages into the eWAT of ASO-Fsp27 treated mice. C57BL/6 mice were fed normal diet (ND; gray bars), or high-fat diet (HFD) plus treatment with ASO-ctrl or ASO-Fsp27 (white and black bars, respectively), as shown in Fig. 1A. (A) Representative immunohistochemistry micrographs of tissue sections using an F4/80 antibody. Brown precipitate is noted in infiltrating macrophages (arrows). Multilocular adipocytes (arrowheads) were noted only in ASO-Fsp27 treated mice. (B) Relative mRNA expression of selected markers associated to pro-inflammatory M1-like macrophages. Data are shown as mean ± s.e.m (n=6). *$P \leq 0.05$ and **$P \leq 0.01$, HFD *vs.* ND. ¶$P \leq 0.05$, ASO-Fsp27 *vs.* ASO-ctrl.
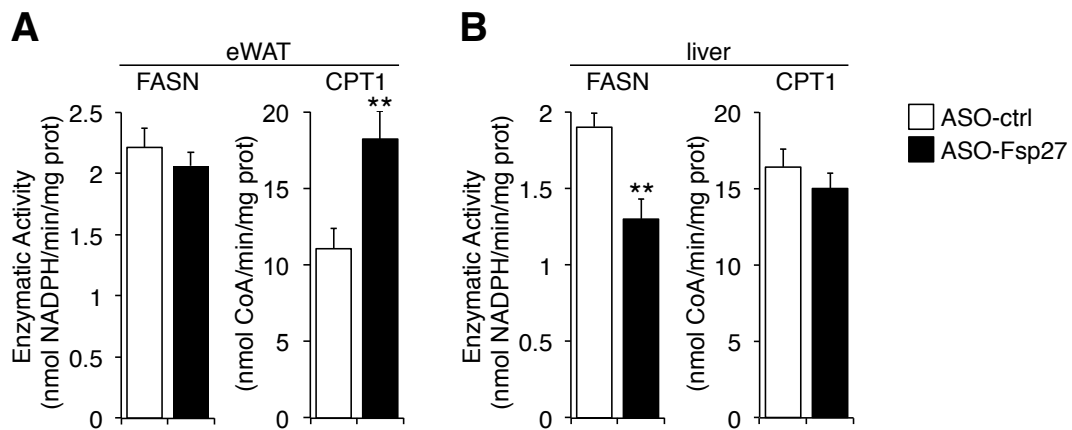
Supplemental Figure S2. Enzymatic activities of FASN and CPT1 in eWAT and liver in HFD-fed C57BL/6 mice treated with ASO-FSp27. Animals were treated with ASO-ctrl or ASO-Fsp27, as shown in Fig. 1A. Enzymatic activities in extracts from eWAT (A) and liver (B) were determined as described in methods. Data are shown as mean ± s.e.m (n=6). **$P \leq 0.01$, ASO-Fsp27 *vs.* ASO-ctrl.

Supplemental Figure S3. Enzymatic activities of FASN and CPT1 in eWAT and liver in chow-fed *ob/ob* mice treated with ASO-FSp27. Animals were treated with ASO-ctrl or ASO-Fsp27, as shown in Fig. 3A. Enzymatic activities in extracts from eWAT (A) and liver (B) were determined as described in methods. Data are shown as mean ± s.e.m (n=6). **$P \leq 0.01$, ASO-Fsp27 *vs.* ASO-ctrl.
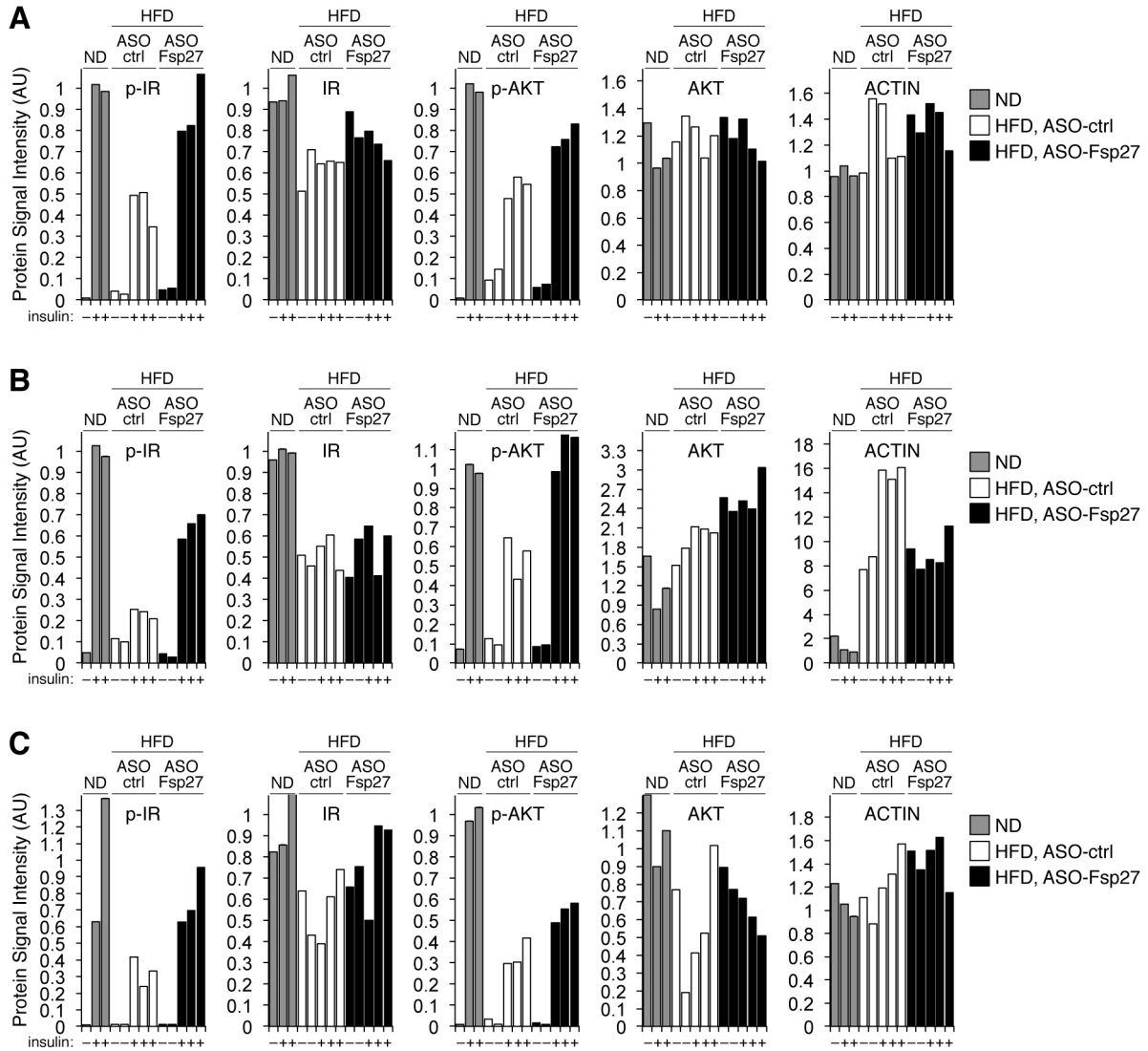
Supplemental Figure S4. Improved insulin sensitivity in mice treated with ASO-Fsp27. Quantification of immunoblots signal intensities shown in Fig. 5D–F.

Transcript	Forward primer	Reverse primer
36b4	GGTGCCTCTGGAGATTTTCG	CACTGGTCTAGGACCCGAGAAG
Acc	TGACAGACTGATCGCAGAGAAAG	TGGAGAGCCCCACACACA
Acox	CAGCAGGAGAAATGGATGCA	GGGCGTAGGTGCCAATTATCT
Adipoq	GGAGAGAAAGGAGATGCAGGT	CTTTCCTGCCAGGGGTTC
Atgl	GCCTCCTTGGACACCTCAATAA	CTTCCTCGGGGTCTACCACA
Cidea	CTCCGAGTACTGGGCGATAC	ACCAGCCTTTGGTGCTAGG
Cideb	CTGCCAGCCTCCAAGAACT	TAGCACTCCACGTAGCAGCA
Cox4	TCACTGCGCTCGTTCTGAT	CGATCGAAAGTATGAGGGATG
Cpt1a	TGAGTGGCGTCCTCTTTGG	CAGCGAGTAGCGCATAGTCATG
Cpt1b	GAGTGACTGGTGGGAAGAATATG	GCTGCTTGCACATTTGTGTT
Dio2	CTGCGCTGTGTCTGGAAC	GGAGCATCTTCACCCAGTTT
Hmgcr	CTTGTGGAATGCCTTGTGATTG	AGCCGAAGCAGCACATGAT
Hsl	TTCTCCAAAGCACCTAGCCAA	TGTGGAAAACTAAGGGCTTGTTG
Ldlr	AGGCTGTGGGCTCCATAGG	TGCGGTCCAGGGTCATCT
Fasn	GCTGCGGAAACTTCAGGAAAT	AGAGACGTGTCACTCCTGGACTT
Fsp27	GGCTCACAGCTTGGAGGA	CTCCACGATTGTGCCATCT
Mcad	TTACCGAAGAGTTGGCGTATG	ATCTTCTGGCCGTTGATAACA
Pcsk9	GAAGACCGCTCCCCTGAT	GCACCCTGGATGCTGGTA
Plin1	GCTGCTTTCTCGGTGTTACAG	GAGCAGGTTCTCCTGCTCA
Plin2	CCTCAGCTCTCCTGTTAGGC	CACTACTGCTGCTGCCATTT
Plin3	CCACAGGATGCTGAAAAGG	TGATGTCCCTGAACATGCTG
Plin4	GGACTTACAAACAGCAACAGACC	TCTGTGAGTTGGTGGACACTTT
Plin5	ACATGGTGCTGGGCAAGT	TCAGCTGCCAGGACTGCTA
Ppara	CACCTGCAGAGCAACCATC	CCGAAGGTCCACCATTTTT
Retn	TTCCTTGTCCCTGAACTGCT	CCAATGTTCTTTATTGCATTTGG
Scd1	CCGGAGACCCCTTAGATCGA	TAGCCTGTAAAAGATTTCTGCAAACC
Srebp1c	GGAGCCATGGATTGCACATT	GGCCCGGGAAGTCACTGT
Srebp2	GCGTTCTGGAGACCATGGA	ACAAAGTTGCTCTGAAAACAAATCA
Ucp1	GGCCTCTACGACTCAGTCCA	TAAGCCGGCTGAGATCTTGT

Supplemental Table S1. Oligonucleotides used in qPCR studies.