Figure 1

A) Liver Mfn2 protein levels (Relative values to Steatosis)

B) Liver Mfn2 protein levels (Relative values to Control)

C) Liver TAG (mg/g tissue)

D) Liver TAG (mg/g tissue)

E) Liver Mfn2 protein levels (Relative values to Control)

F) Hepatic pro-inflammatory cytokines (pg/mg protein)

G) Liver TAG (mg/g tissue)

H) Olate esterification (Relative values to control)

I) Sirius Red and Electron microscopy

J) Hepatic fibrotic markers

K) Liver tumors

L) Tumor number
Figure 2

A) Western blot analysis showing the expression levels of Mfn2, BIP, p-PERK, PERK, p-eIF2α, eIF2α, CHOP, p-IRE1, IRE1, ATF6, and β-actin. The blots are from samples treated with AdC, AdC, and AdBIP.

B) Bar graph showing the relative protein values to control for IL-6, TNFα, and IL-1β in L-KO + AdC and L-KO + AdBIP groups. * indicates significant difference.

C) Bar graph showing the relative values to control for Plasma IL-1β. * indicates significant difference.

D) Bar graph showing the relative mRNA levels of TGFβ, Collagenα-1, and α-SMA. * indicates significant difference.

E) Bar graph showing the relative values to control for Liver TAG. * indicates significant difference.

F) Bar graph showing the relative values to control for Oleate esterification of NEFAs, DAG, and TAG. * indicates significant difference.
Figure 3

A) Heatmap showing relative expression levels of various proteins in control (C) and L-KO conditions.

B) Diagram illustrating mitochondrial ER association.

C) Bar graph showing DPM/mgprot/h for PS in control (C) and L-KO conditions.

D) Bar graph showing DPM/mgprot/h for PE in control (C) and L-KO conditions.

E) Bar graph showing DPM/mgprot/h for PC in control (C) and L-KO conditions.

F) Bar graph showing relative values to Control for PS, PE, and PC in L-KO + AdC and L-KO + AdBIP conditions.

G) Bar graph showing relative values to Control for PS, PE, and PC in L-KO + AdC and L-KO + AdMfn2 conditions.

H) Western blot analysis for Mfn2, PSS1, PSS2, PEMT, and β-actin in control (C) and L-KO conditions.

I) Western blot analysis for MAMs fraction proteins in control (C) and L-KO conditions.
Figure 5

A) IP Mfn2

B) Mfn2 (1-613) (expressed in liver and purified)

C) Incorporation of L-Ser into phospholipids

D) Purification of Mfn2 (1-613) expressed in E. coli

E) Mfn2 (1-613) E. coli

F) Liposome flotation assay

G) NBD-PS/Rhod-PE liposomes

H) PS extraction assay

I) FRET assay with PS

J) Incorporation of L-Ser into phospholipids

Relative values to Control

PS  PE  PC

TOP  BOTTOM
**Figure 6**

**Purification of Mfn1 (1-592) expressed in E. coli**

A) Input Elution

B) Liposome flotation assay Mfn1 (1-592)

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C) PS extraction assay

D) PE extraction assay

E) Mfn1 (1-592)

F) Purification of Mfn2 (21-613) expressed in E. coli

G) Liposome flotation assay Mfn2 (21-613)

H) PS extraction assay

I) PE extraction assay

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**Mfn1**

**Mfn2**

**Purification of Mfn1 (1-592)**

**Purification of Mfn2 (21-613)**
Figure 7

A) 

B) 

C) 

D) 

Liver TAG 

mRNA levels 

IL6 

IL-1β 

TNFα 

TGFβ 

Collagena a1