Supplementary Figure Legends

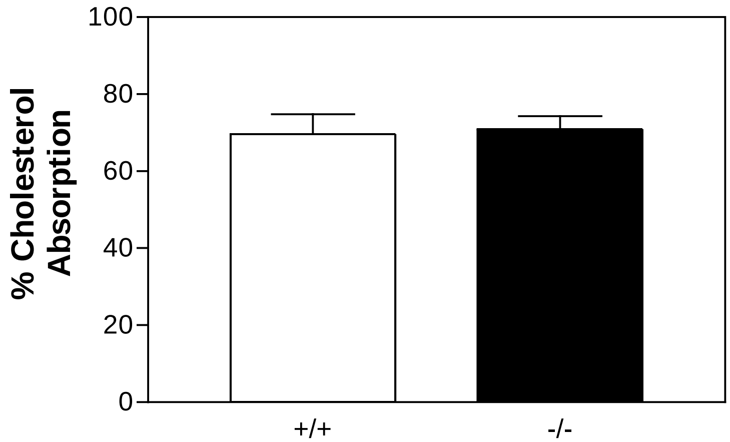
Suppl. Figure 1. Cholesterol absorption is not different in *Ire1b*$^{+/+}$ and *Ire1b*$^{-/-}$ mice as measured by dual-isotope labeling method. Wild-type *Ire1b*$^{+/+}$ (+/+; *open bars*) and *Ire1b*$^{-/-}$ (-/-; *closed bars*) male mice were fed a chow diet supplemented with 2% *w/w* cholesterol (three per group) diet for two weeks. After 2 weeks, mice were placed in individual cages that had wire mesh floors. Animals were fasted for 6 h and gavaged with a mixture of 0.2 μCi of [^{3}H]sitostanol and 0.1 μCi of [^{14}C]cholesterol in 15 μl of olive oil. Feces were collected for 48 h and used for cholesterol absorption studies using dual-isotope ratio method (Wang and Carey, 2003; Carter et al., 1997; Sehayek et al., 1998). Values are mean ± SD.

Suppl. Figure 2. Effect of deletion or overexpression of IRE1β on different genes involved in ER stress response and lipid metabolism. Panel A-D: Total RNA from the intestine and liver of high cholesterol and high-fed *Ire1b*$^{+/+}$ and *Ire1b*$^{-/-}$ mice were isolated and used for the quantification of mRNA of various proteins involved in lipid metabolism and ER stress response. Panel E: Human hepatoma (Huh7) cells were transfected with different c-myc-tagged IRE1β expression plasmids. Total RNA were isolated and used to measure mRNA levels of different genes. The gene/ARPp0 ratios in cells transfected with pcDNA3.1 were used for normalization. Values are mean ± SD.

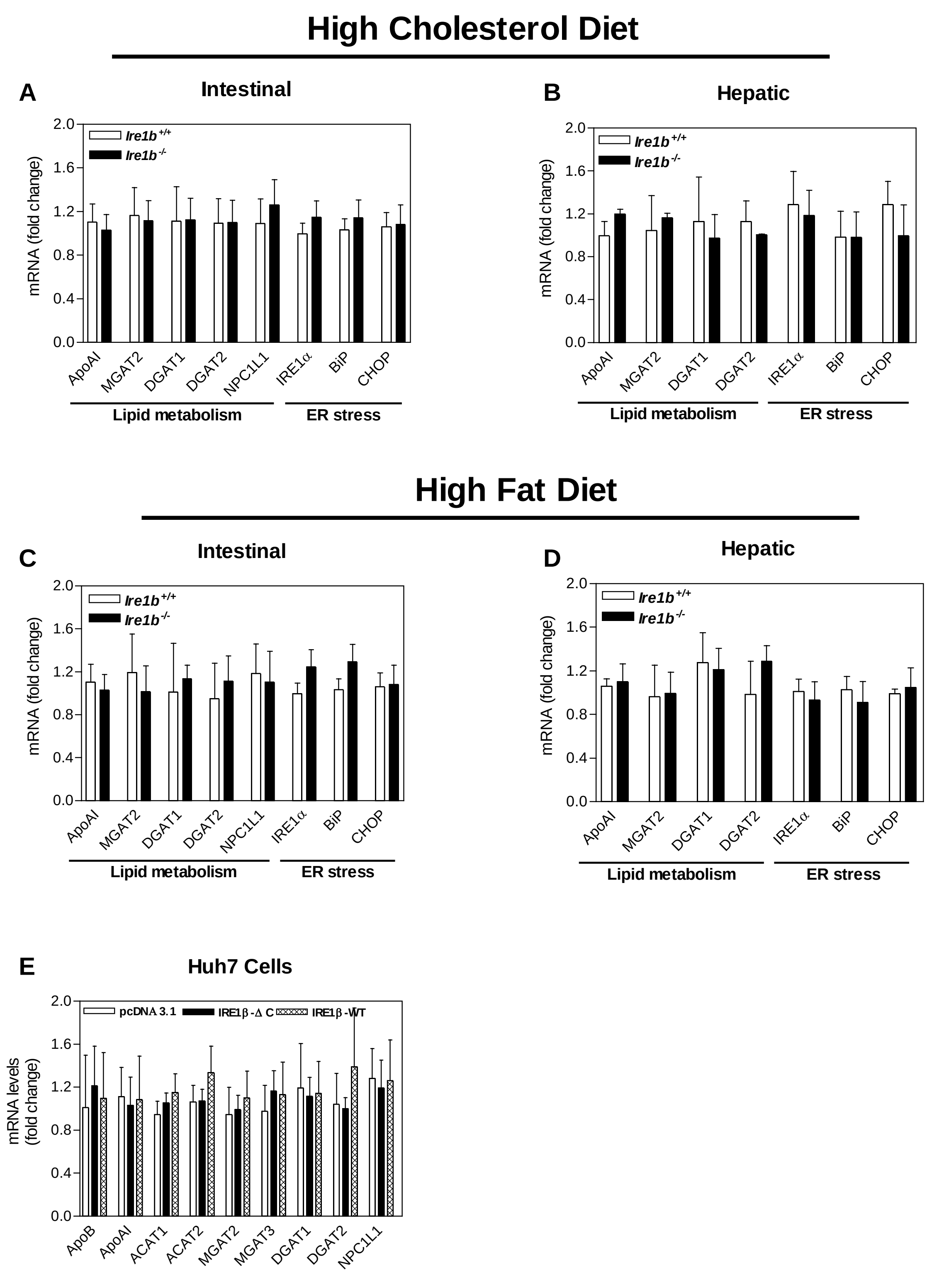
Suppl. Figure 3. MTP protein is increased in the intestine but not in the liver of *Ire1b*$^{-/-}$ mice. Intestinal and liver samples from *Ire1b*$^{+/+}$ and *Ire1b*$^{-/-}$ mice fed a high fat diet (Panels A and B) were Western blotted using using Alexa Flour. Bands were quantified using Scion Image and plotted as MTP/GAPDH ratios (Panels C and D). Values are mean ± SD.

Suppl. Figure 4. Increasing amounts of MTP secrete more apoB48. COS-7 cells, grown in a 6-well plates, were co-transfected with 1 μg of human apoB48 and various amounts of MTP-FLAG expression plasmids for 48 h. Cells were washed and incubated with fresh media containing oleic acid:bovine serum albumin (0.2 mM:0.5% w/v) complexes for 17 h. Media were collected and used to measure apoB secretion (Hussain et al., 1995; Bakillah et al., 1997) by ELISA (Panel A). Values are mean ± SD. ApoB48 was also immunoprecipitated from media and used for Western blotting (Panel B, apoB48). Cellular homogenates were used to measure MTP and GAPDH levels (Panel B).

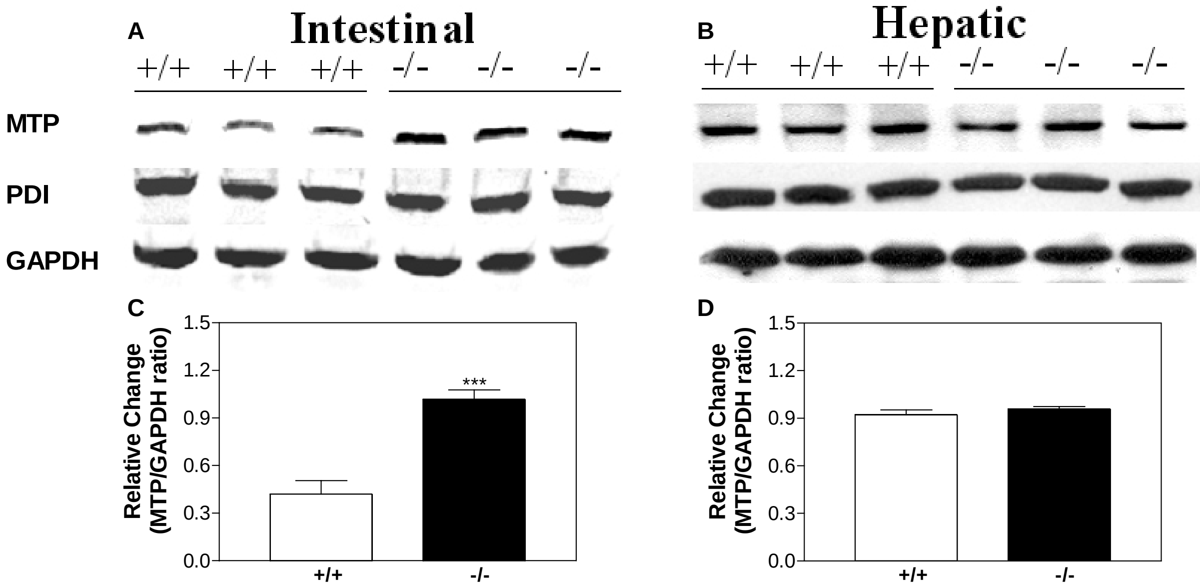
Suppl. Figure 1



Suppl. Figure 2



Suppl. Fig. 3


A
Intestinal
+/+ +/+ +/+ -/- -/- -/-
MTP
PDI
GAPDH
B
Hepatic
+/+ +/+ +/+ -/- -/- -/-
C
Relative Change (MTP/GAPDH ratio)
1.5
1.2
0.9
0.6
0.3
0.0
***
+/+
-/-
D
Relative Change (MTP/GAPDH ratio)
1.5
1.2
0.9
0.6
0.3
0.0
+/+
-/-

Suppl. Figure 4

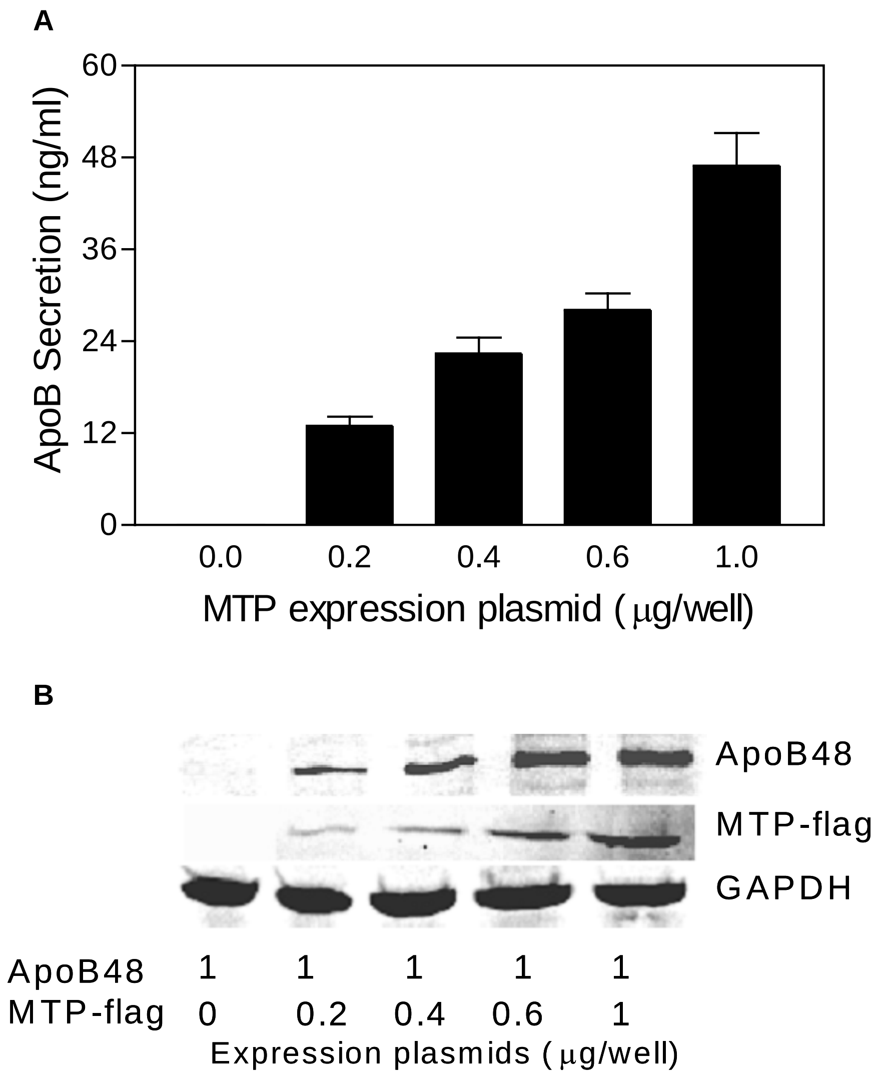


Table S1. Primer pairs used for qPCR studies and detection of XBP-1.

Gene ID	5' primer	3' primer
ARPp0, human	GTCCAACTACTTCCTTAAGATCATCCA	ACATGCGGATCTGCTGCAT
ARPp0, mouse	GTCCAACTACTTCCTCAAGATCATCCA	ACATGCGGATCTGCTGCAT
MTP, human (exon 1-2)	TGTGCTTTTTCTCTGCTTCATTTC	GCTTGTACAGCCGGTCATTATTT
MTP, human (exon 7-8)	ACGGCCATTCCCATTGTG	GCCAGAGCTCCGAGAGAGAA
MTP, mouse	CACACAACTGGCCTCTCATTAAAT	TGCCCCCATCAAGAAACACT
PDI, human	CGGCTTCCCCCAAGGA	TGCGCTTCTTCAGCCAGTT
NPC1L1, human	CGACTGGAAGGACCATTTTCTG	GCTGTGCCATCCTTGAAGGT
ApoB, human	GCAAGCAGAAGCCAGAAGTG	CCATTTGGAGAAGCAGTTTG
ApoB, mouse	GATCAGGCTTTGCCGCAATA	CATCAGAGGAGAGGCCAATCC
ApoA1, human	GGCAGAGACTATGTGTCCCAGTT	CCAGTTGTCAAGGAGCTTTAGGTT
ApoA1, mouse	GGCCGTGGCTCTGGTCTT	GGTTCATCTTGCTGCCATACG
ACAT1, human	TTGAAGGAAGTGGTCATAGTAAGTGCTA	TGGCTGGCAGCAAGGAA
ACAT1, human	AGGAGACTCCAGCATTGTGGTT	CCTGTTCTCAAGTAAGCCAAGTGA
MGAT2, human	GACCCCTCTCGGAACTACATTG	CGGAACCACAAGGTCAGCAT
MGAT2, mouse	ACCTTCGCGGTCCTTCAGT	CTTGTCCCAGTCCAGGTACCA
MGAT3, human	ACTCTGGCCCTTCTCTGTTTTTT	AACGCCTTCCACCTTGGTT
DGAT1, human	GATGTTCCAGTTCTGCCAGAAGT	GATGTTCCAGTTCTGCCAGAAGT
DGAT1, mouse	GTTCAGCTCAGACAGTGGTTTCA	TCAGCATCACCACACACCAA
DGAT2, human	GCTCCATGCCTGGCAAGA	CAGGGCCAGTTTCACAAAGC
DGAT2, mouse	AGCTGCAGGTCATCTCAGTACTACA	CTGCAGGCCACTCCTAGCA
IRE1α, human	GCAGCCTGTATACGCTTGGAA	TGCACCAATTCTGGGATGGT
IRE1α, mouse	GCCCCGGGAGTTTTGG	GGGTCGAGACAAACAACAAGGT
IRE1β, human	CTCCAGTTCGCGGCGCTGCT	GGTGGACACCAGCAGGAGGTTCTCT
IRE1β, mouse	CTGCAGCTTGTGACGTTGCT	GGTAGACACAAACAGAAGGCTCTCT
BiP, human	GCCATGGTTCTCACTAAAATGAAA	AACAACTGCATGGGTAACCTTCTT
BiP, mouse	CGGACGCACTTGGAATGAC	AACCACCTTGAATGGCAAGAA
CHOP, human	CCTGGAAATGAAGAGGAAGAATCA	TCAGTCAGCCAAGCCAGAGA
CHOP, mouse	CGAAGAGGAAGAATCAAAAACCTT	GCCCTGGCTCCTCTGTCA
Ski2, human	ACTGGGAGCTGCTGAACTTG	CCATGGGGAAGGCTACTCTC
XRN1, human	GATGGATCTCAGAGCGGTATCC	CAGGTACAAGTTGTCAAATTCAGGAA
XRN2, human	CGCAAGTACCCGTCCATCA	CTGGAATCTTTACACCATTGCATT
GAPDH, mouse	GCAGTGGCAAAGTGGAGATTG	GTGAGTGGAGTCATACTGGAACATG
XBP-1, mouse and human	GGCCGGGTCTGCTGAGT	TCCTTCTGGGTAGACCTCTGGGA

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