

Supplemental Tables

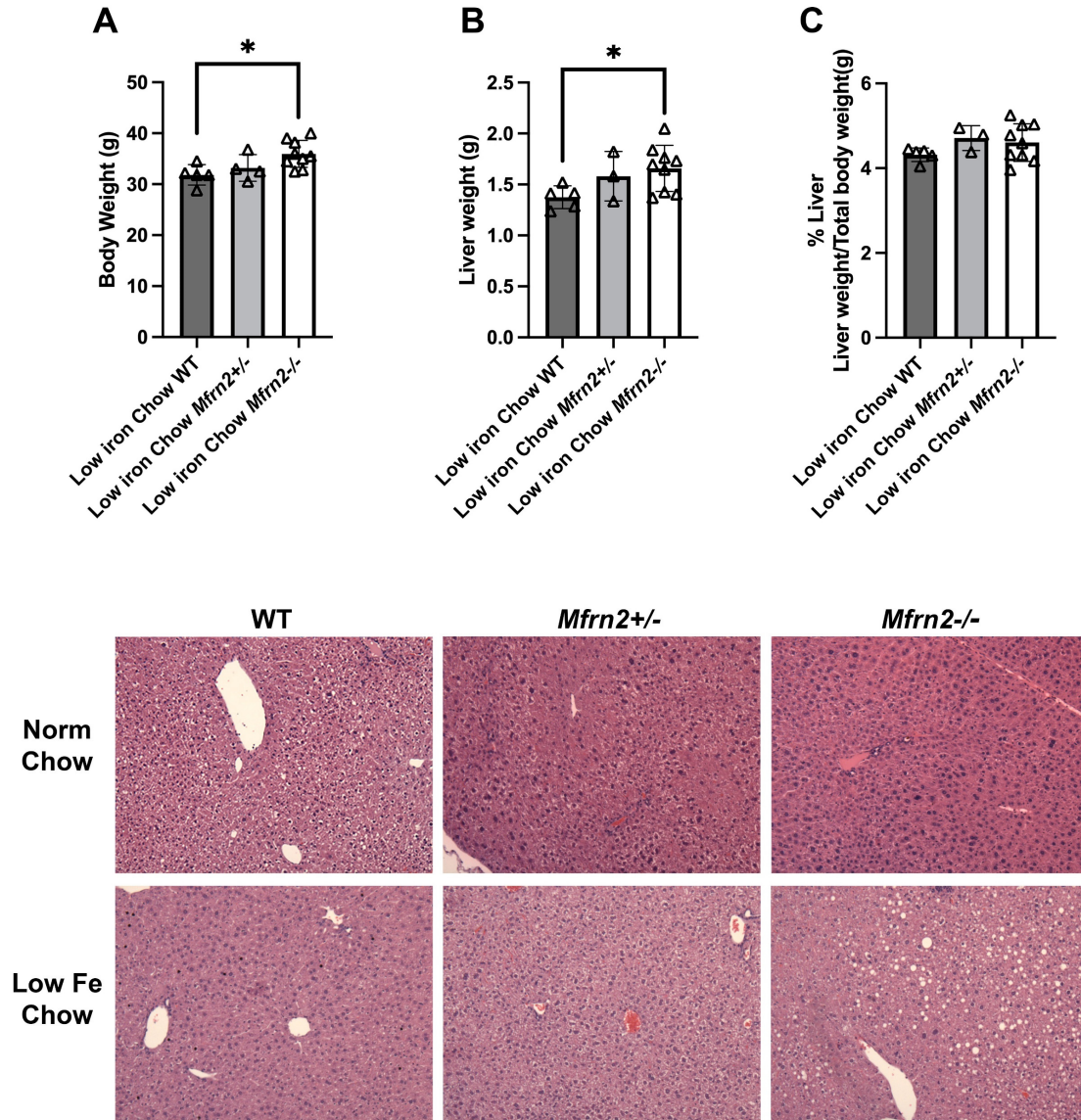
Supplemental Table S1 GF vs SPF Normal Chow vs Low Iron Chow lipidomics

Supplemental Table S2 LION SPF vs GF Low Iron Chow lipidomics

Supplemental Table S3 Mfrn2^{-/-} vs Mfrn2^{+/+} Normal Chow vs Low Iron Chow lipidomics

Supplemental Figures

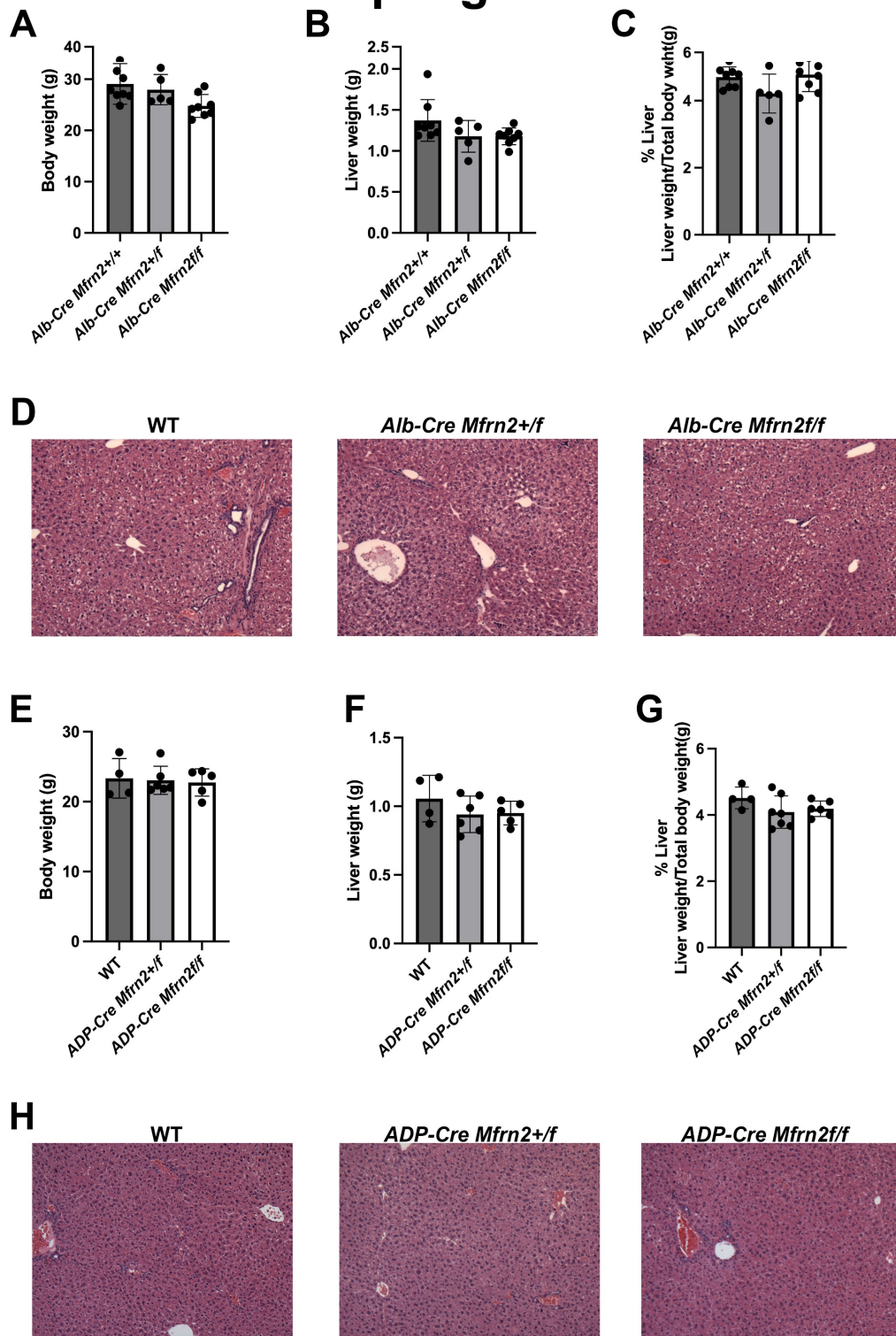
Sup Figure 1



Supplemental Figure S1 The low iron diet reveals Mfrn2^{-/-} male mice also show MASLD.

Six to eight week old male *Mfrn2*^{+/+}, *Mfrn2*^{+/-}, and *Mfrn2*^{-/-} mice were maintained on a normal chow (350 mg/kg iron) or a low iron chow (4-8 mg/kg iron) for 10 weeks (n=3-9 mice/genotype/diet). Low iron diet (a) body weight, (b) liver weight and (c) %Liver ratio (liver/body weight. (d) H&E staining on 5 μ liver sections was performed from animals on each diet and images captured using a 10X objective. Representative images are shown for each genotype on each diet. A representative experiment is shown. For all graphs, statistics were performed as described in Materials and Methods with $p \leq 0.05$ considered significant.

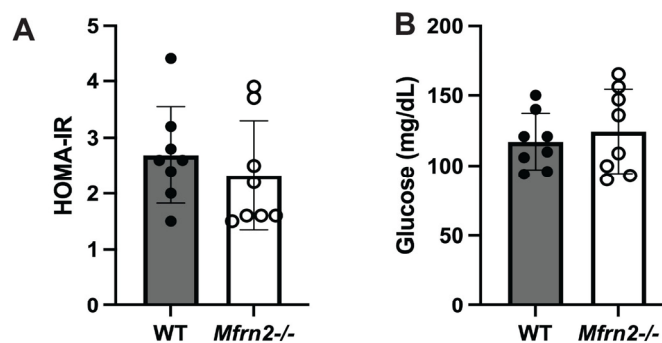
Sup Fig 2



Supplemental Figure S2 Tissue specific loss of Mfrn2 in hepatocytes or adipocytes does not result in MASLD

Alb-Cre SPF and *Alb-Cre Mfrn2^{-/-}* female mice were fed a normal chow diet as in figure 4 and a) Body weight, (b) Liver weight, (c) %Liver/Body weight and (d) liver histology examined. (n=5-8). *ADP-Cre* SPF and *ADP-Cre Mfrn2^{-/-}* mice were treated as in a and (e) Body weight, (f) Liver weight, (g) %Liver/Body weight and (h) liver histology examined. (n=4-6). Representative images are shown for each genotype on the normal chow diet. A representative experiment is shown. For all graphs, statistics were performed as described in Materials and Methods with $p \leq 0.05$ considered significant.

Sup Fig 3



Supplemental Figure S3 Loss of Mfrn2 does not affect serum glucose levels nor HOMA-IR

HOMA-IR (A) and Serum glucose (B) from animals as in figure 4 were determined. A representative experiment is shown. N=2-3 separate experiments. For all graphs, statistics were performed as described in Materials and Methods with $p \leq 0.05$ considered significant.