Supplementary Figure Legend

Figure S1. SphK2 deficiency potentiates alcohol-induced liver injury. (A) ALT (B) AST (C) total bilirubin (D) albumin (E) cholesterol (F) bile acids were measured from serum using VetScan mammalian liver profile. Results are represented as mean ± SE from each group (n = 3). Statistical significance relative to the corresponding WT group, *P < 0.05; ***P < 0.001.

Figure S2. SphK2 deficiency suppresses intestinal organoid growth and potentiates intestinal barrier dysfunction. (A) FITC-Dextran levels in the serum of WT and SphK2$^{-/-}$ mice fed Lieber-DeCarli control diet or 5% alcohol diet for 60 days. Results are represented as mean ± SE from each group (n = 6). Statistical significance relative to the WT group, *P < 0.05; **P < 0.01. (B) Representative images of the intestine H&E staining of WT and SphK2$^{-/-}$ mice fed the Lieber-DeCarli control diet or 5% alcohol diet for 60 days are shown. (C) Representative images of WT and SphK2$^{-/-}$ intestinal organoids cultured for 4, 6, and ten days are shown.

Figure S3. The hepatic mRNA expression of *the* inflammatory mediators in alcoholic cirrhosis and hepatocellular carcinoma (HCC). Total RNA was isolated from human liver samples from normal control, alcoholic cirrhosis or HCC patients. The mRNA levels of inflammatory mediators (*IL-22, IL-22R1, IL-1, IL-6, MCP-1, TNF-α*) are measured by real-time PCR and normalized to *HPRT1* as an internal control. Results are represented as mean ± SE from each group (n = 8). Statistical significance relative to the normal control, *P < 0.05; **P < 0.01***, P < 0.001.

Figure S1

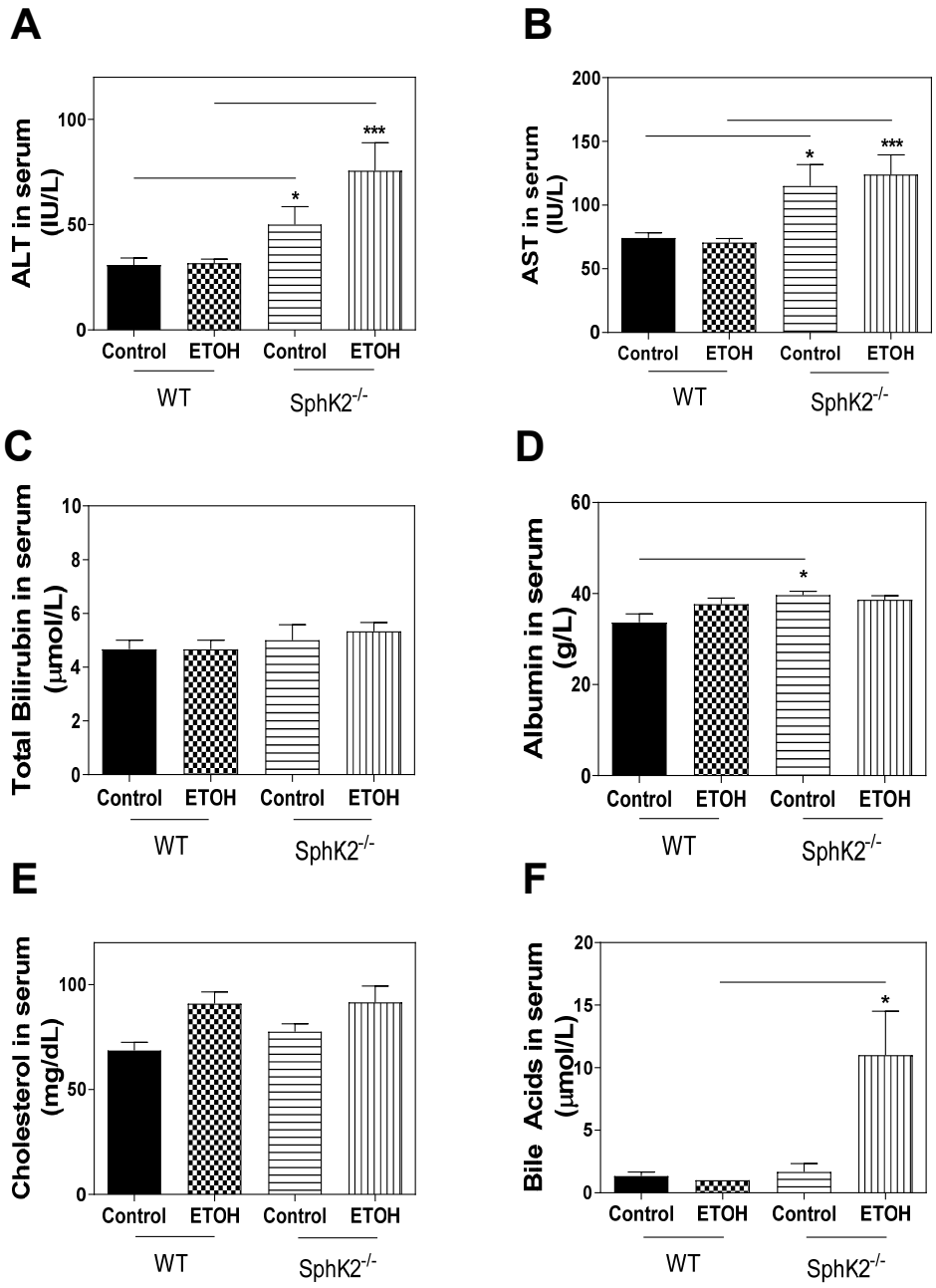
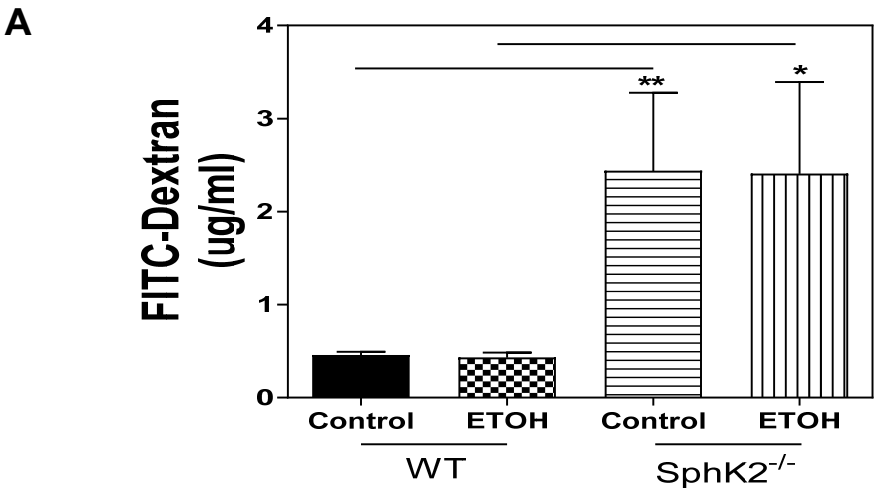
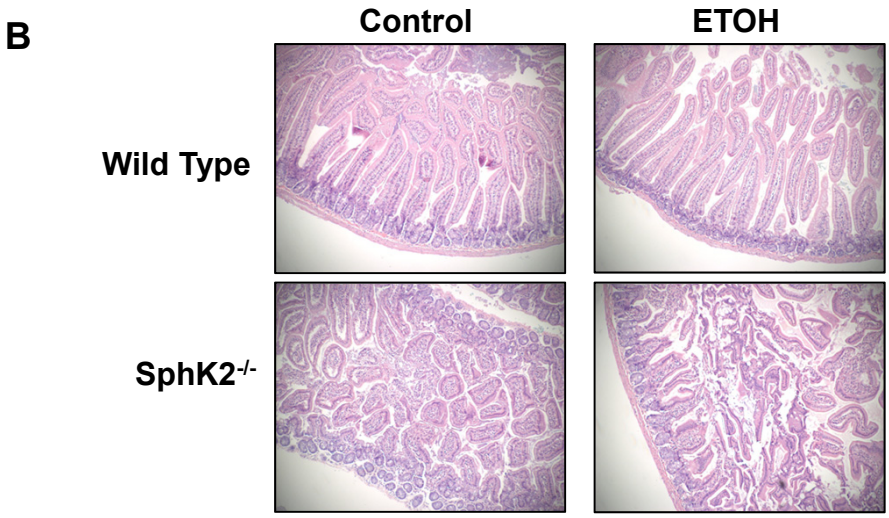

A
ALT in serum (IU/L)
100
50
0
*
***
Control
ETOH
Control
ETOH
WT
SphK2-/-
B
AST in serum (IU/L)
200
150
100
50
0
*
***
Control
ETOH
Control
ETOH
WT
SphK2-/-
C
Total Bilirubin in serum (μmol/L)
10
8
6
4
2
0
Control
ETOH
Control
ETOH
WT
SphK2-/-
D
Albumin in serum (g/L)
60
40
20
0
*
Control
ETOH
Control
ETOH
WT
SphK2-/-
E
Cholesterol in serum (mg/dL)
100
50
0
Control
ETOH
Control
ETOH
WT
SphK2-/-
F
Bile Acids in serum (μmol/L)
20
15
10
5
0
*
Control
ETOH
Control
ETOH
WT
SphK2-/-

Figure S2


A
FITC-Dextran (ug/ml)
4
3
2
1
0
**
*
Control
ETOH
Control
ETOH
WT
SphK2-/-


B
Control
ETOH
Wild Type
SphK2-/-

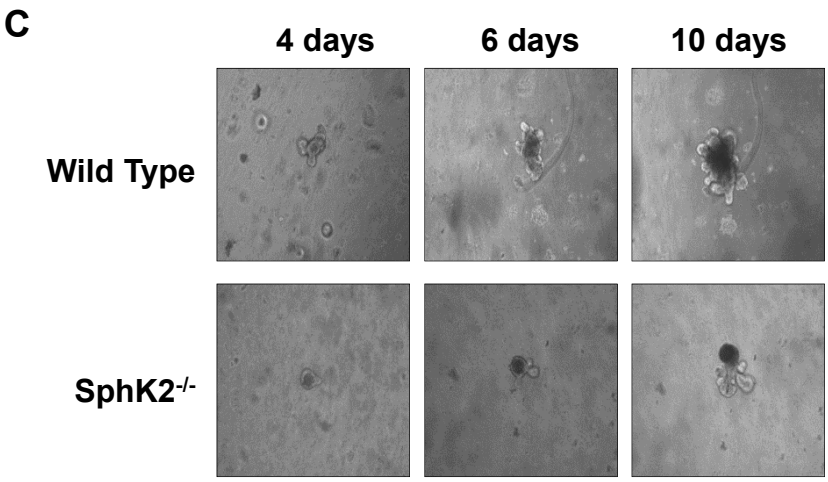
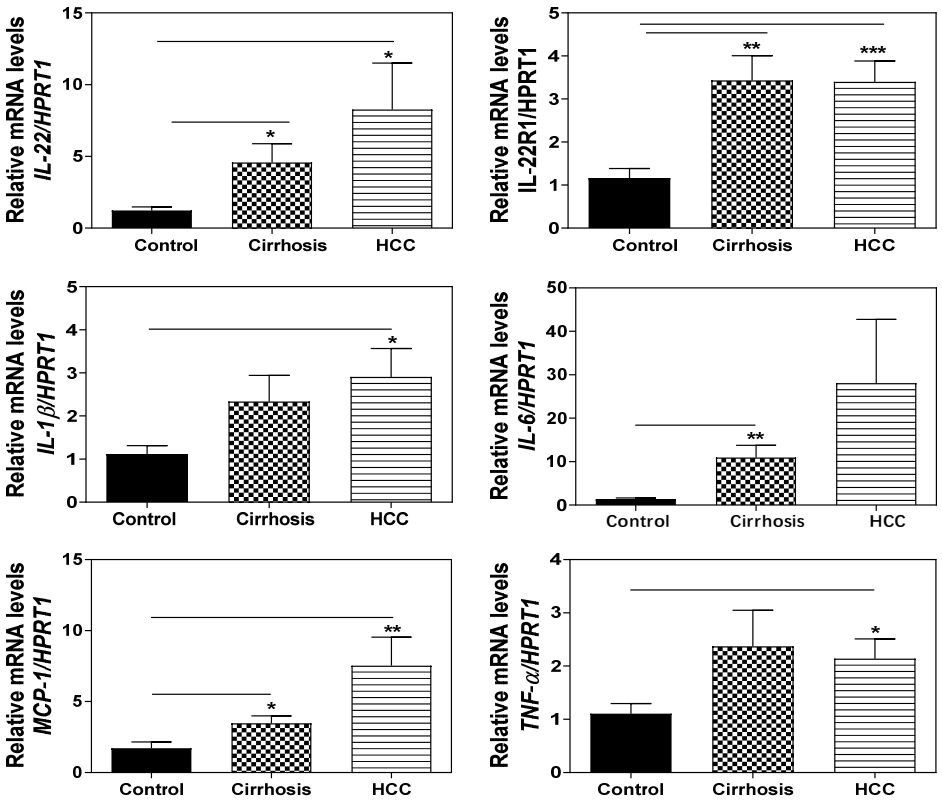

C
4 days
6 days
10 days
Wild Type
SphK2-/-

Figure S3


Relative mRNA levels IL-22/HPRT1
Relative mRNA levels IL-22R1/HPRT1
Relative mRNA levels IL-1β/HPRT1
Relative mRNA levels IL-6/HPRT1
Relative mRNA levels MCP-1/HPRT1
Relative mRNA levels TNF-α/HPRT1
Control
Cirrhosis
HCC