

**Supplemental Table 1. Top 3 serum ions that were significantly increased and decreased in CCl<sub>4</sub>-treated *Fxr*-null mice compared with CCl<sub>4</sub>-treated WT mice**

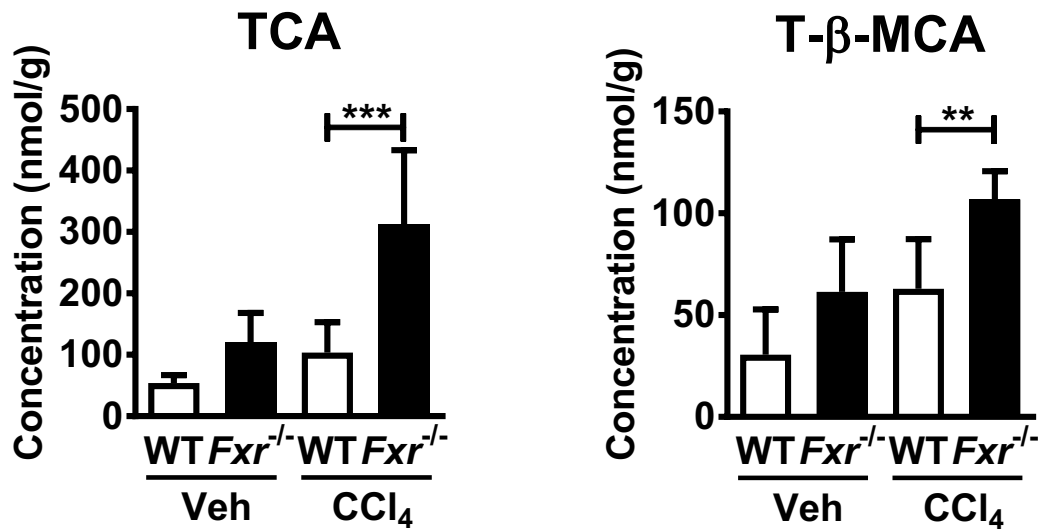
**Increased**

Rank	Retention time	m/z	Identity	Elemental composition
1	2.80	514.283	Taurocholate	C <sub>26</sub> H <sub>45</sub> N <sub>0</sub> O <sub>7</sub> S
2	2.46	514.284	Tauro-β-muricholate	C <sub>26</sub> H <sub>45</sub> N <sub>0</sub> O <sub>7</sub> S
3	2.46	582.271	Unidentified	-

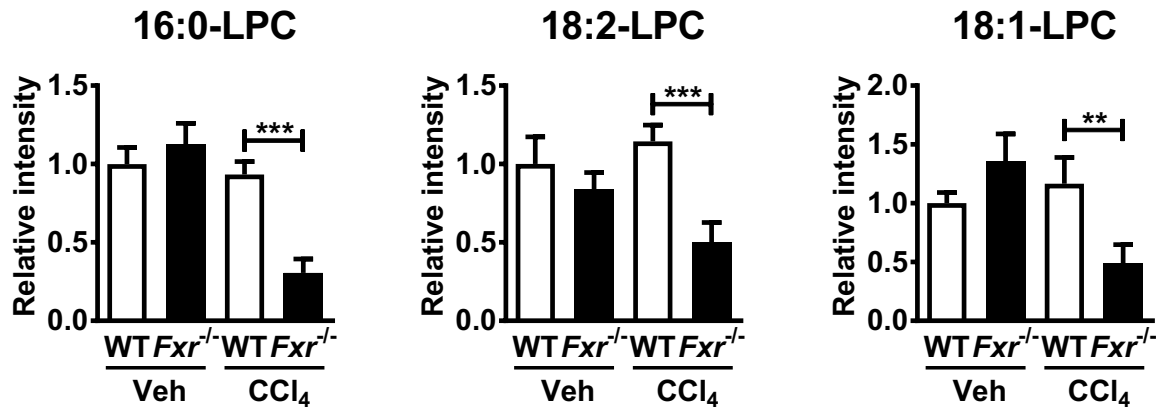
**Decreased**

Rank	RT (min.)	m/z	Identity	Elemental composition
1	4.72	540.329	Palmitoyl-LPC (16:0-LPC)	C <sub>25</sub> H <sub>52</sub> N <sub>0</sub> O <sub>9</sub> P
2	4.52	564.329	Linoleoyl-LPC (18:2-LPC)	C <sub>27</sub> H <sub>52</sub> N <sub>0</sub> O <sub>9</sub> P
3	4.87	566.346	Oleoyl-LPC (18:1-LPC)	C <sub>27</sub> H <sub>54</sub> N <sub>0</sub> O <sub>9</sub> P

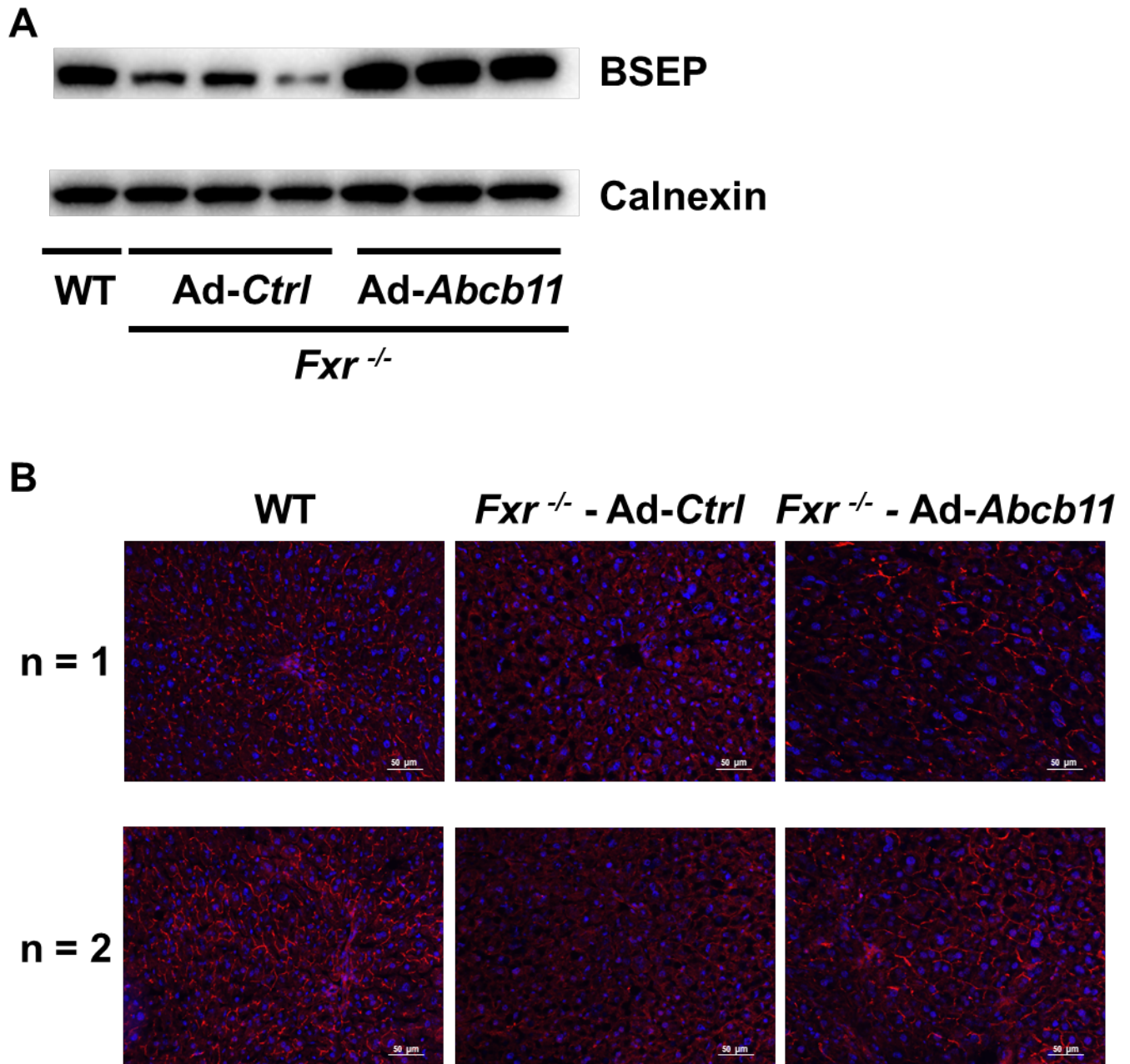
Abbreviations: LPC, lysophosphatidylcholine



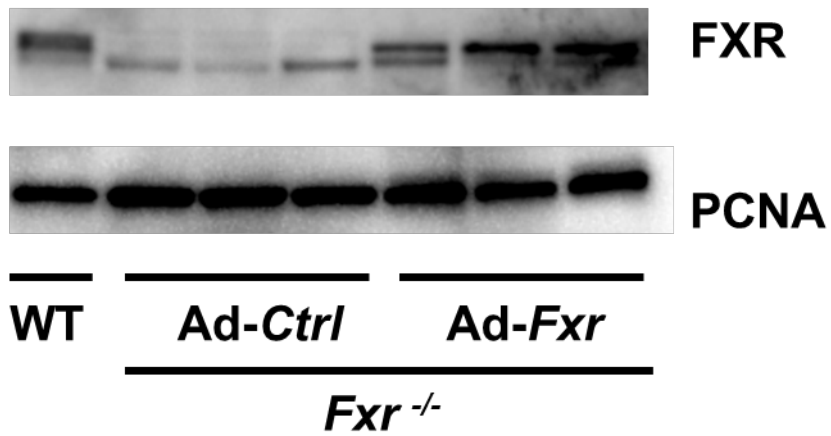
**Supplemental Fig. 1. Hepatic taurocholate (TCA) and tauro-β-muricholate (T-β-MCA) levels in WT and *Fxr*-null mice (*Fxr*<sup>-/-</sup>) after CCl<sub>4</sub> or vehicle administration.** The hepatic bile acids levels were determined by Q-TOF-MS and expressed as nmol/gram liver.



**Supplemental Fig. 2. Serum palmitoyl-LPC (16:0-LPC), linoleoyl-LPC (18:2-LPC) and oleoyl-LPC (18:1-LPC) levels in WT and *Fxr*-null mice (*Fxr*<sup>-/-</sup>) after CCl<sub>4</sub> administration and vehicle. The LPC levels were determined by Q-TOF-MS and the intensities were expressed as the values relative to those of vehicle-treated WT group.**



**Supplemental Fig. 3. (A)** Immunoblot analysis of BSEP (*Abcb11*). Hepatic membrane fractions of WT and *Fxr*-null mice (*Fxr*<sup>-/-</sup>) after *Abcb11*-expressing vector (Ad-*Abcb11*) or control virus (Ad-*Ctrl*) administration were subjected to immunoblot analysis. **(B)** Immunofluorescence analysis of BSEP. Frozen liver sections obtained from WT and *Fxr*<sup>-/-</sup> after Ad-*Abcb11* or Ad-*Ctrl* administration were used. Red and blue signals indicate the presence of BSEP and 4',6-diamidino-2-phenylindole (DAPI), respectively.



Supplemental Fig. 4. FXR protein levels in the hepatic nuclear samples of WT and *Fxr*-null mice (*Fxr*<sup>-/-</sup>) after *Fxr*-expressing vector (*Ad-Fxr*) or control virus (*Ad-Ctrl*) administration.