

## **Supplemental figure legends**

**Supplemental Figure 1    Lack of  $\alpha$ -CGRP reduces histological changes and liver fibrosis induced by BDL.** [A] H&E staining images from paraffin-embedded liver sections of the experimental groups shows that there was severe histology changes in the liver of BDL WT mice compared with WT mice, which was reduced in BDL  $\alpha$ -CGRP<sup>-/-</sup> mice (n=3, Orig. magnification,  $\times 10$ , scale bar =100 $\mu$ m). [B] Masson's trichrome staining demonstrated that there was enhanced collagen deposition in the liver of BDL WT mice compared to WT mice, which was decreased in BDL  $\alpha$ -CGRP<sup>-/-</sup> mice (n=3, Orig. magnification,  $\times 20$ , scale bar =50 $\mu$ m).

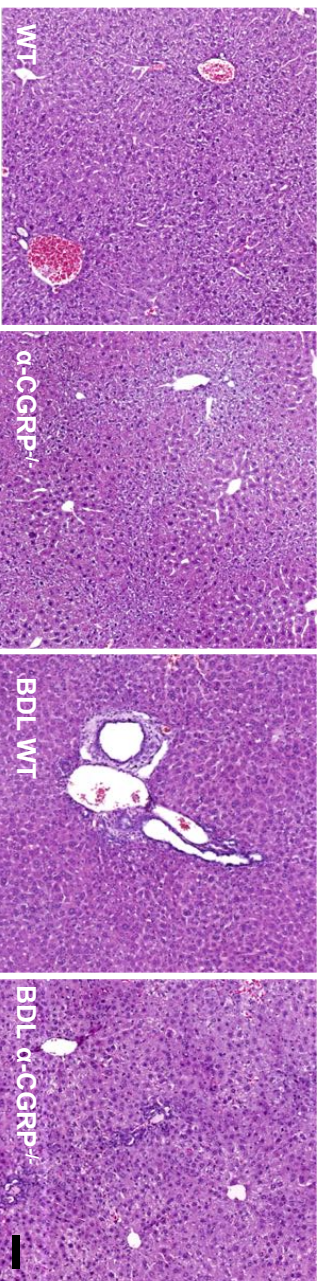
**Supplemental Figure 2    Depletion of  $\alpha$ -CGRP reverses higher serum levels of IL-6 and bilirubin induced by BDL.** [A] There was reduced serum levels of total bilirubin in BDL  $\alpha$ -CGRP<sup>-/-</sup> mice compared to BDL WT mice (n=3). [B] There was decreased serum IL-6 levels in BDL  $\alpha$ -CGRP<sup>-/-</sup> mice compared to BDL WT mice (n=3). \* $P < 0.05$  vs. WT mice. # $P < 0.05$  vs. BDL WT mice.

**Supplemental Figure 3    Effect of cholangiocyte supernatant on the protein expression of Fn1 and p16 in HHSCs.** [A] Enhanced expression of Fn1 was observed in HHSCs treated with cholangiocyte supernatant from BDL WT mice compared with HHSCs treated with WT mice choangiocyte supernatant, which was reduced in HHSCs treated with cholangiocyte supernatant from BDL  $\alpha$ -CGRP<sup>-/-</sup> mice (Orig. magnification,  $\times 40$ , scale bar =50 $\mu$ m). [B] There was decreased expression of

p16 in HHSCs treated with cholangiocyte supernatant from BDL WT mice compared with HHSCs treated with WT mice choangiocyte supernatant, which was increased in HHSCs treated with cholangiocyte supernatant from BDL  $\alpha$ -CGRP<sup>-/-</sup> mice (Orig. magnification,  $\times 40$ , scale bar = 50 $\mu$ m).

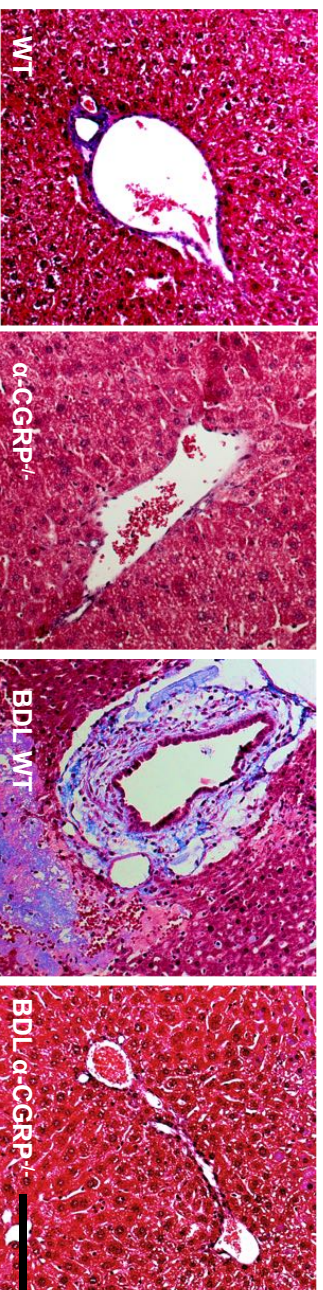
**Supplemental Figure 1**

**A**



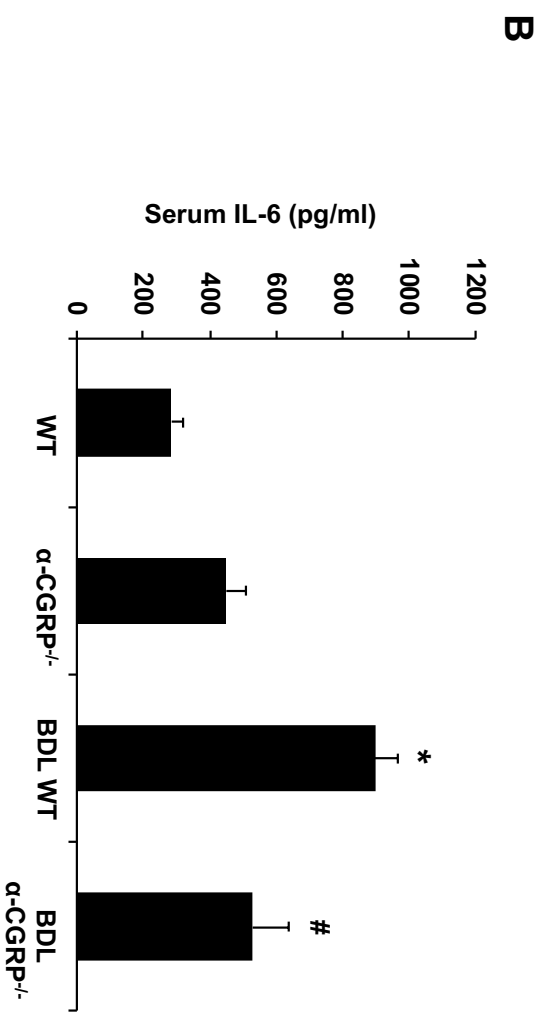
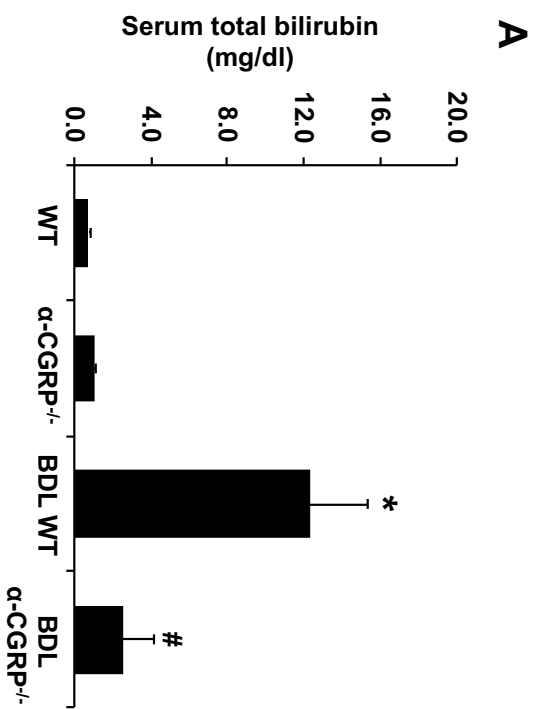
**H&E staining**

**B**



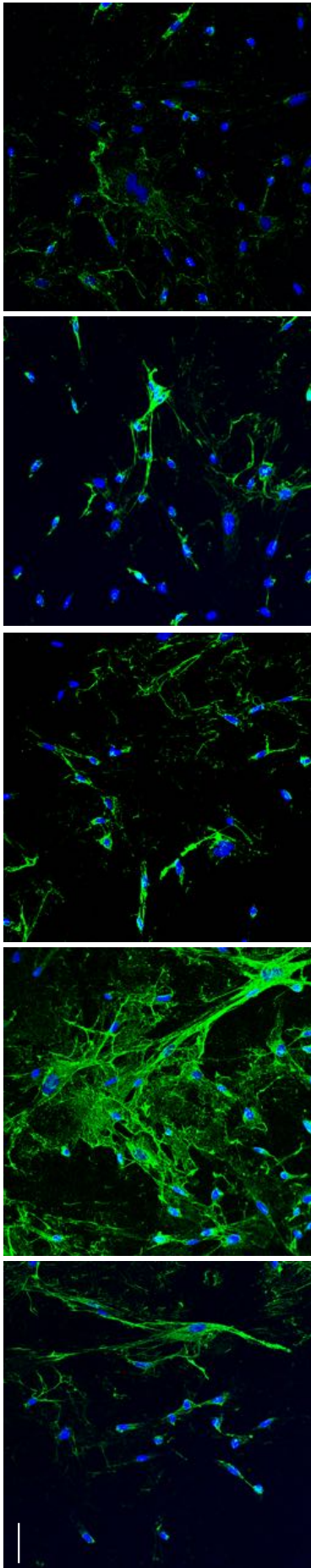
**Masson trichrome staining**

Supplemental Figure 2



A

Supplemental Figure 3



HHSCs basal

HHSCs + WT  
Cholangiocyte supernatant

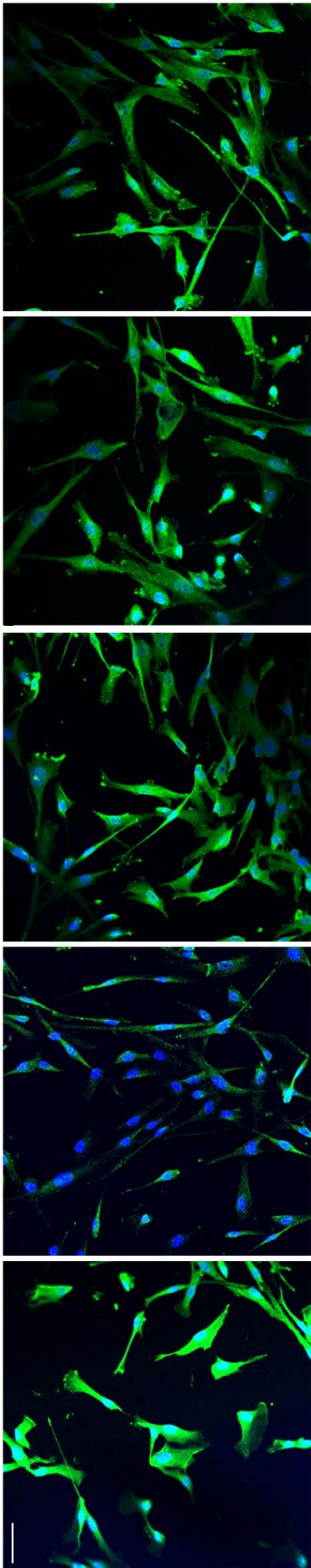
HHSCs +  $\alpha$ -CGRP<sup>-/-</sup> WT  
Cholangiocyte supernatant

HHSCs + BDL WT  
Cholangiocyte supernatant

HHSCs + BDL  $\alpha$ -CGRP<sup>-/-</sup>  
Cholangiocyte supernatant

DAPI Fn1

B



HHSCs basal

HHSCs + WT  
Cholangiocyte supernatant

HHSCs +  $\alpha$ -CGRP<sup>-/-</sup> WT  
Cholangiocyte supernatant

HHSCs + BDL WT  
Cholangiocyte supernatant

HHSCs + BDL  $\alpha$ -CGRP<sup>-/-</sup>  
Cholangiocyte supernatant

DAPI p16