Supplementary figure legends

Supplementary Fig. 1 The protein expression of PPARα is suppressed during ALF progression. Mice were intraperitoneally injected with D-GalN (700 mg/kg) and LPS (10 μg/kg) at 2, 4 and 6 hours (10 mice/group). The mice in the control group (n = 8) were injected with PBS only. Protein expression levels of PPARα were measured by western blot assays in the livers of the control and the 2-, 4- and 6-hours groups. Densitometry analysis of the proteins was performed for each sample.

Supplementary Fig. 2 PPARα activation by Wy-14,643 regulates NF-kB and MAPK pathway in D-GalN/LPS-induced liver injury. Wy/D-GalN/LPS-treated mice were administered Wy-14,643 (6 mg/kg) *via* tail vein injection 2 hours prior to D-GalN/LPS exposure (n = 10); D-GalN/LPS-treated mice were pretreated with vehicle (DMSO) 2 hours prior to D-GalN/LPS exposure (n = 10). Control mice were pretreated with vehicle (DMSO) 2 hours prior to PBS injection (n = 8). The mice were sacrificed 6 hours after D-GalN/LPS treatment, and the liver samples were collected. The levels of phosphorylated MAP kinases, including JNK, ERK, p38, and phosphorylated NF-κBp65, phosphorylated Akt and β-actin were measured by western blotting. Densitometry analysis of the proteins was performed for each sample.

Supplementary Fig. 3 PPARα activation by Wy-14,643 regulates autophagy in D-GalN/LPS-induced liver injury. Wy/D-GalN/LPS-treated mice were administered Wy-14,643 (6 mg/kg) *via* tail vein injection 2 hours prior to D-GalN/LPS exposure (n

= 10); D-GalN/LPS-treated mice were pretreated with vehicle (DMSO) 2 hours prior to D-GalN/LPS exposure (n = 10). Control mice were pretreated with vehicle (DMSO) 2 hours prior to PBS injection (n = 8). Mice were sacrificed 6 hours after D-GalN/LPS treatment, and liver samples were collected. The protein expression levels of autophagy-related proteins, including LC3B, Atg7, Atg5, Beclin-1, p62 and PPARα, were measured by western blotting in livers from control mice, D-GalN/LPS-treated mice, and Wy/D-GalN/LPS-treated mice. Densitometry analysis of the proteins was performed for each sample.

Supplementary Fig. 4 SiRNA Atg7 and 3-MA inhibits the decreased the expression level of LC3II/I in D-GalN/LPS-treated mice. Protein expression levels of LC3B and β-actin were measured by western blotting in livers from D-GalN/LPS-treated mice (n=9), SiRNA Atg7/D-GalN/LPS-treated mice (n=9) and 3-MA/D-GalN/LPS-treated mice (n=9). Densitometry analysis of the proteins was performed for each sample.

Supplementary Fig. 5 PPARα activation by Wy-14,643 regulates autophagy flux in D-GalN/LPS-induced liver injury. Protein expression levels of LC3B, p62 and β-actin were measured by western blotting in livers from D-GalN/LPS-treated mice (n=6), Wy/D-GalN/LPS-treated mice (n=8) and CQ/ Wy/ D-GalN/LPS-treated mice (n=8). Densitometry analysis of the proteins was performed for each sample.