Expanded View Figures

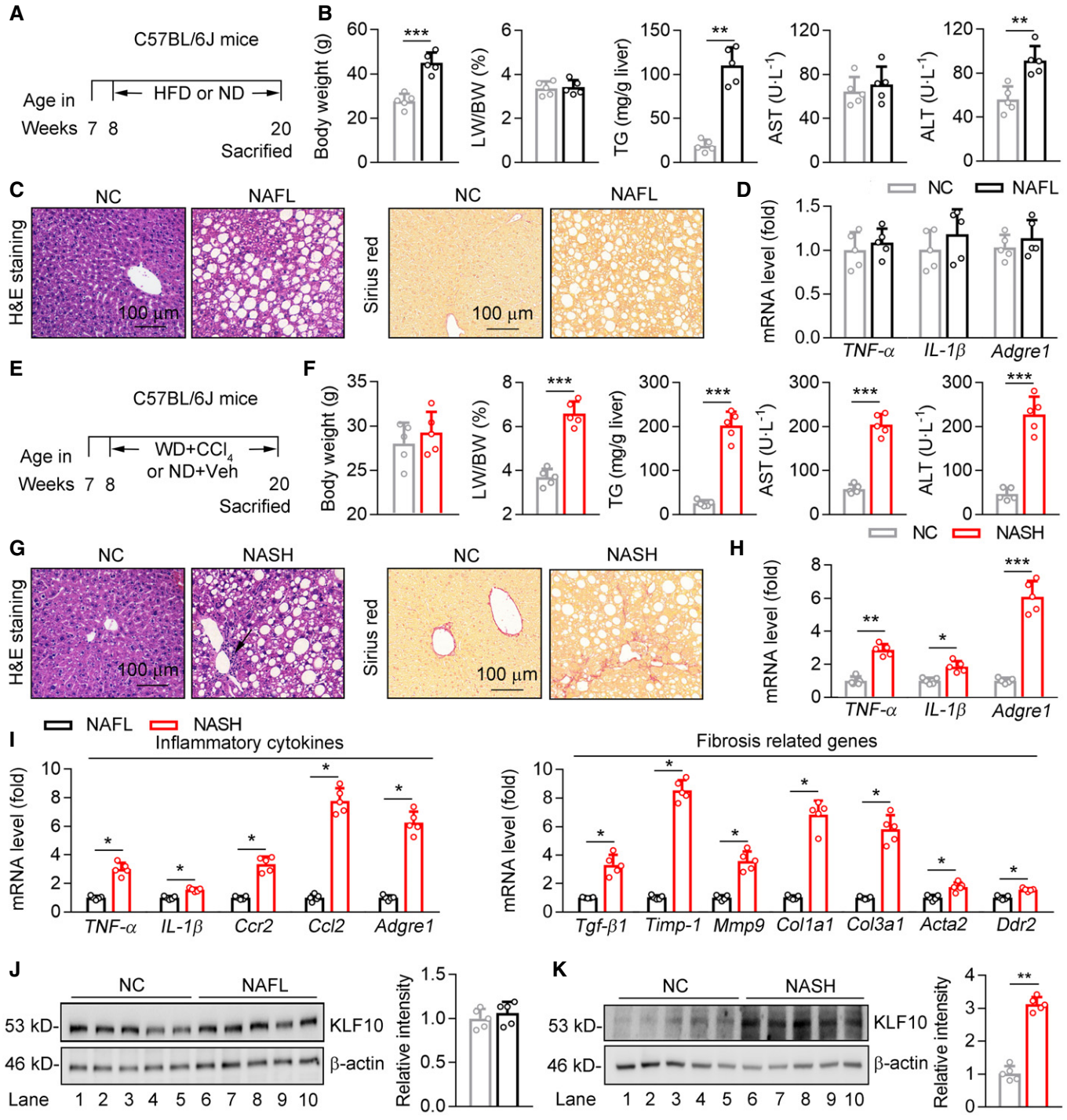

Figure EV1.

Figure EV1. KLF10 expression was selectively induced in the livers from NASH mice.

A–D 8-week-old male C57BL/6J mice were kept on high-fat-diet-feeding (HFD) or normal diet (ND) for 12 weeks to induce NAFL model. $n = 5$ per group. (A) Scheme for the experimental strategy. (B) Body weights, liver/body weight ratio, hepatic TG contents, and serum AST and ALT levels. (C) Representative H&E staining and Sirius red staining of liver sections. (D) Relative mRNA levels of hepatic inflammatory genes.

E–H 8-week-old male C57BL/6J mice were kept on WD/CCl_4 or ND/Vehicle control for 12 weeks to induce NASH model. $n = 5$ per group. (E) Scheme for the experimental strategy. (F) Body weights, liver/body weight ratio, hepatic TG contents, and serum AST and ALT levels. (G) Representative H&E staining and Sirius red staining of liver sections. (H) Relative mRNA levels of hepatic inflammatory genes.

I–K Comparison of WD/CCl_4-treated mice (NASH) and HFD-fed mice (NAFL). $n = 5$ per group. (I) Relative mRNA level of genes involved in the hepatic inflammation and fibrosis. (J) Protein levels of KLF10 in the liver, and its normalization to β-actin.
(K) Representative KLF10 immunofluorescence staining of liver sections.

Data information: $^*P < 0.05$, $^{**}P < 0.01$, $^{***}P < 0.001$. Results are shown as mean ± SD. Student's *t*-test (B, D, F, H, I–K).
Source data are available online for this figure.

Figure EV2. The roles of KLF10 overexpression and zDHHC7 knockdown in cultured cells.

A, B HepG2 cells were transfected with lentivirus expressing KLF10 or negative control (Ctrl). $n = 5$ independent experiments. (A) Relative mRNA of zDHHC7. (B) Protein levels of KLF10 and zDHHC7, and their normalization to β-actin.

C–G HepG2 cells were transfected with lentivirus expressing KLF10 or negative control (Ctrl). $n = 5$ independent experiments. (C) Protein levels of KLF10, and its normalization to β-actin. (D) BODIPY staining for lipid droplets. (E) Cellular TG contents. (F) Fatty acids uptake assays. (G) Relative mRNA level of fatty acid transporters.

H–L HepG2 cells were treated with lentivirus expressing shRNA targeting zDHHC7 or negative control (Ctrl). $n = 3$ independent experiments. (H) Protein levels of zDHHC7, and its normalization to β-actin. (I) BODIPY staining for lipid droplets in HepG2 cells. (J) Cellular TG contents. (K) Protein levels of palmitoylated CD36. (L) CD36 protein expression in the plasma membrane fractions, and its normalization to ATP1a1.

M Representative immunofluorescence staining of zDHHC7 and TGN38 in HepG2 cells.

N, O On day 0, HepG2 cells were transduced with lentivirus expressing negative control (Ctrl) or shzDHHC7. On day 2, cells were treated with 1 mM nocodazole for 12 h. On day 3, cells were fixed or collected at 0 and 8 h after removal of nocodazole. $n = 3$. Results represent three independent experiments. (N) Immunofluorescence staining of TGN38 (red). (O) Protein levels of palmitoylated CD36 in HepG2 cells.

P CD36 protein expression in the plasma membrane fractions, and its normalization to ATP1a1. $n = 3$. Results represent three independent experiments.

Data information: $^{**}P < 0.01$, $^{***}P < 0.001$. Results are shown as mean ± SD. Student's *t*-test (A–C, E–H, J–L). One-way ANOVA (O, P).
Source data are available online for this figure.

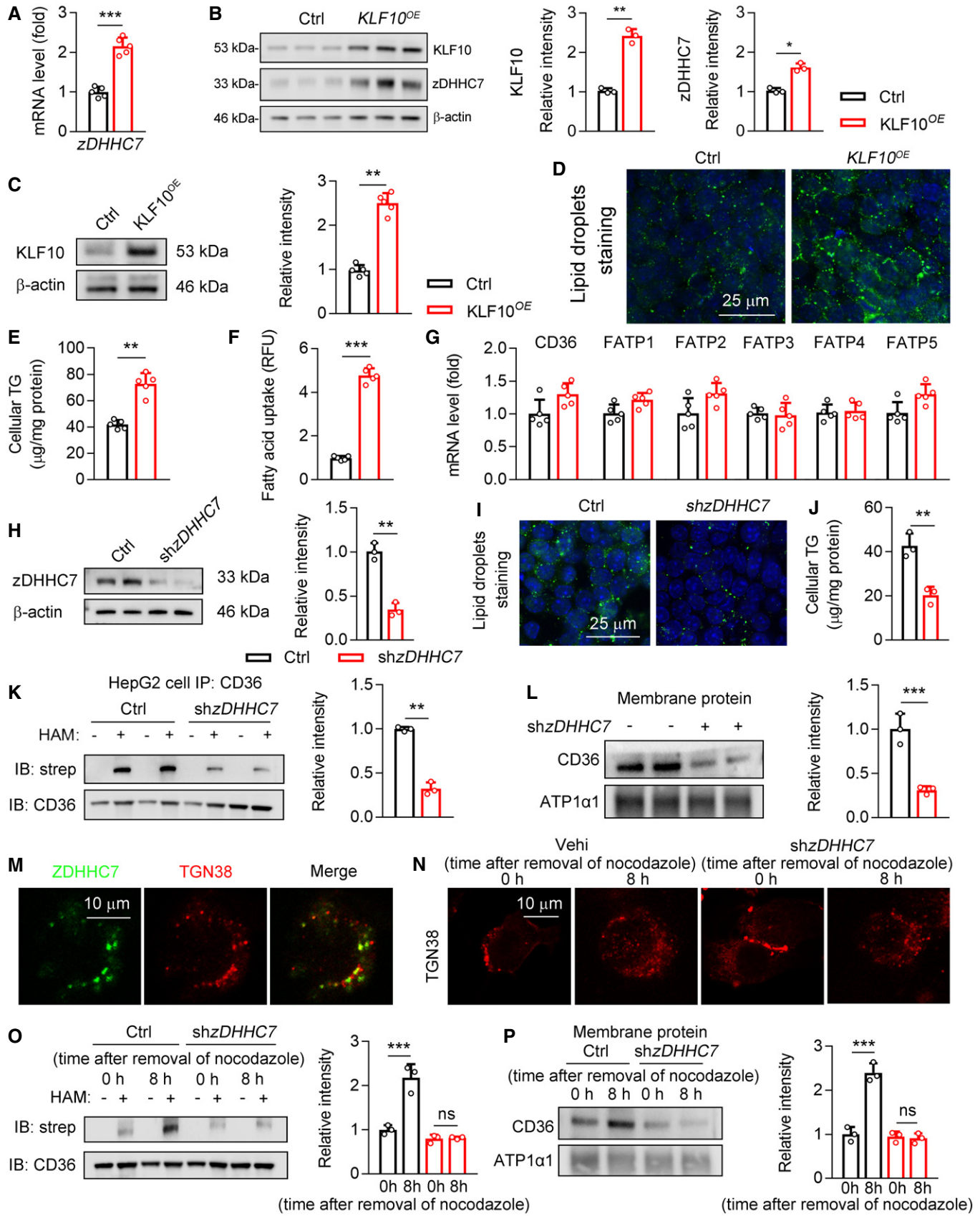

Figure EV2.

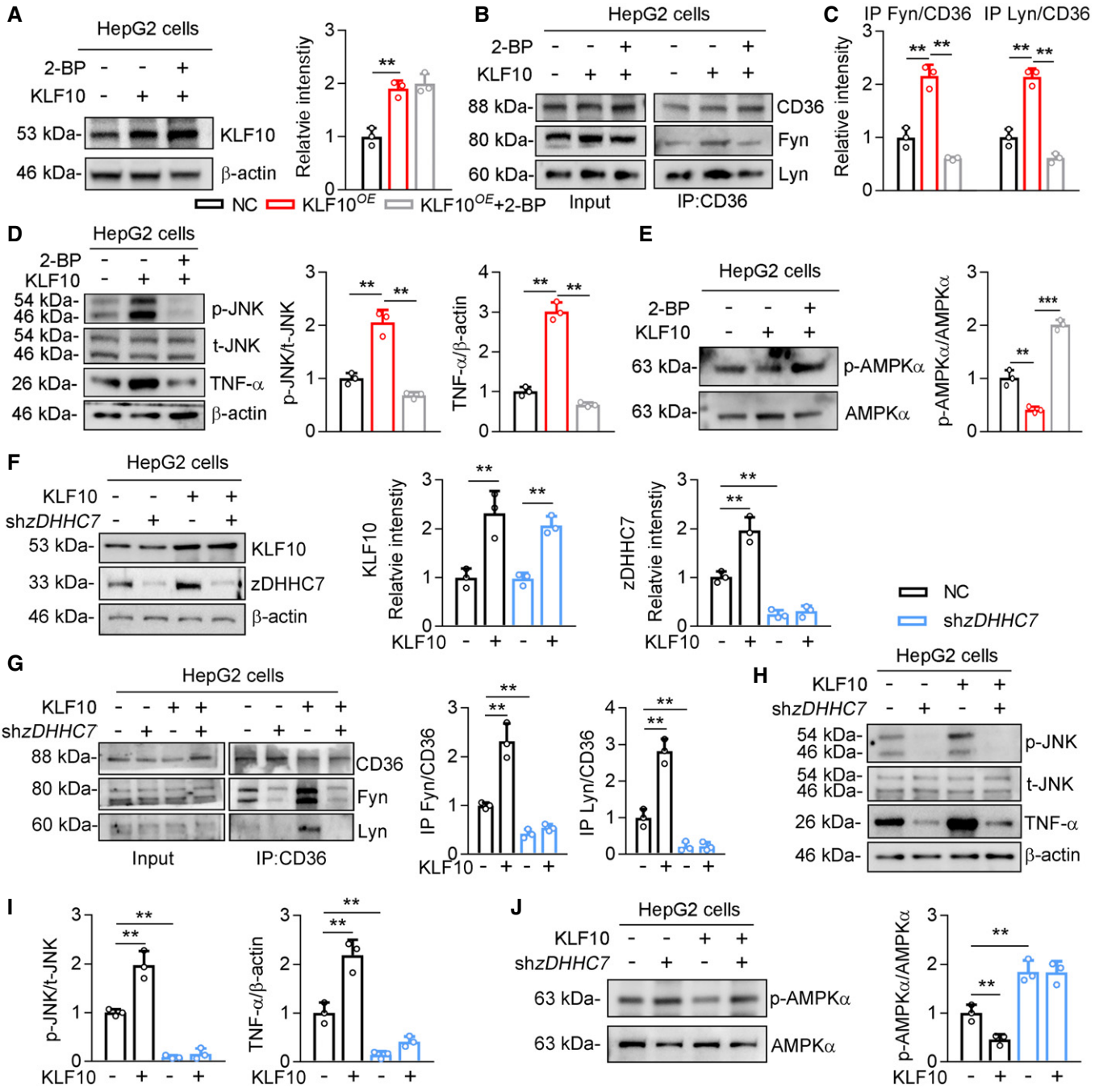

Figure EV3. KLF10 overexpression-induced CD36/Fyn/Lyn complex formation is dependent on zDHHC7.

A–E HepG2 cells were treated with 2-BP and/or transfected with lentivirus vectors expressing KLF10. $n = 3$ independent experiments. (A) Protein levels of KLF10, and its normalization to β-actin. (B, C) Interactions of CD36 and Fyn/Lyn by co-immunoprecipitation assays (B), and their quantitation (C). (D) Protein levels of p-JNK, t-JNK, and TNF-α, and their quantitation. (E) Protein level of p-AMPK and its normalization to t-AMPK.

F–J HepG2 cells were treated with sh*zDHHC7* and/or transfected with lentivirus vectors expressing KLF10. $n = 3$ independent experiments. (F) Protein level of KLF10, and its normalization to β-actin. (G) Interaction of CD36 and Fyn/Lyn by co-immunoprecipitation assays, and their quantitation. (H) Protein levels of p-JNK, t-JNK, and TNF-α. (I) Quantitation of p-JNK, and TNF-α. (J) Protein level of p-AMPK and its normalization to t-AMPK.

Data information: $^{**}P < 0.01$, $^{***}P < 0.001$. Results are shown as mean ± SD. One-way ANOVA (A, C–G, I, J).
Source data are available online for this figure.

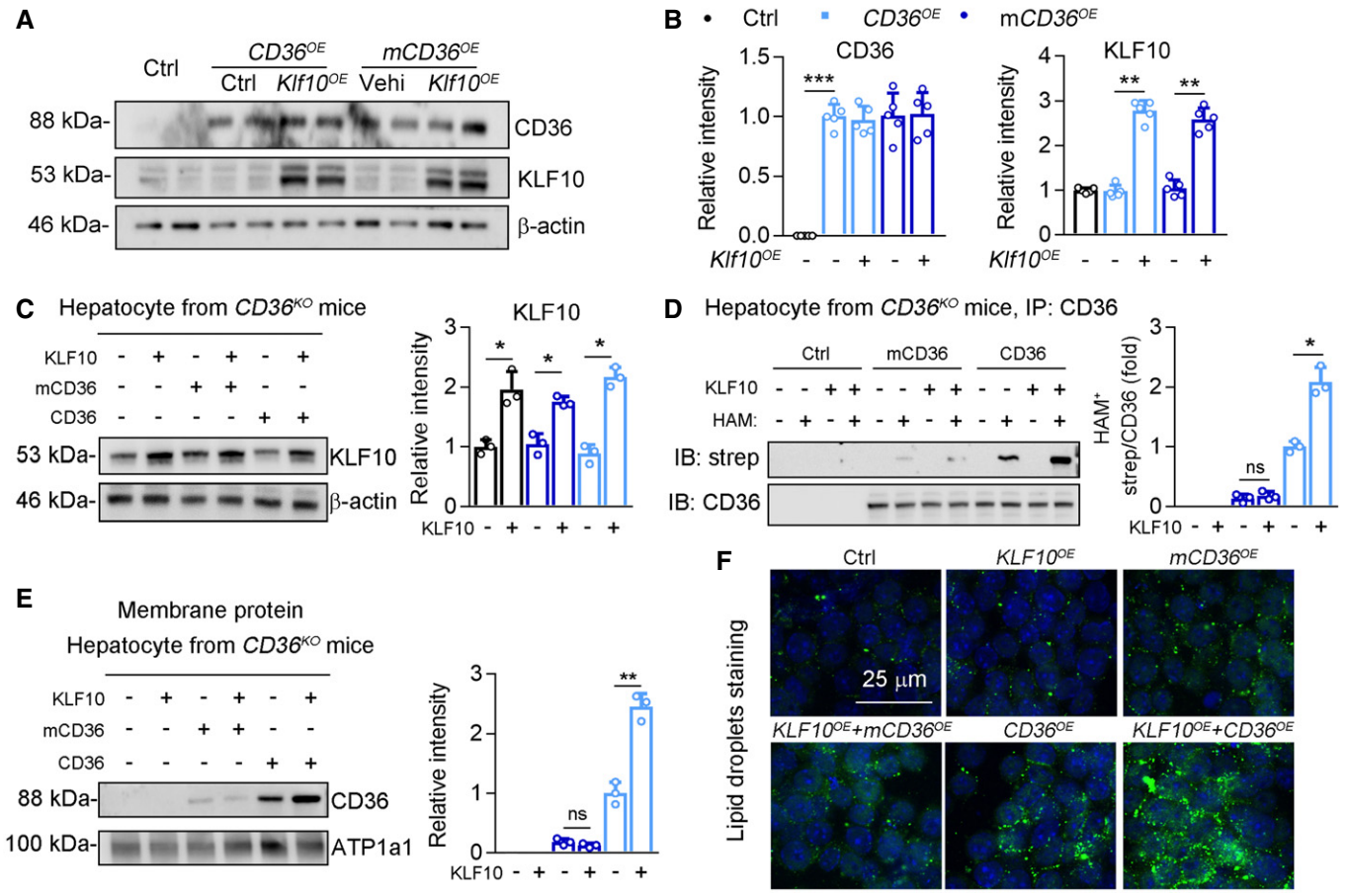

Figure EV4. Inhibition of CD36 palmitoylation attenuated KLF10-mediated lipid accumulation.

A, B Protein levels of CD36 and KLF10 (A), and their normalizations to β-actin (B). $n = 5$. Results represent three independent experiments. The experimental strategy has been described in the Fig 7.

C–F Mouse primary hepatocytes were isolated from *CD36*^{KO} mice and then transfected with lentivirus-wt-*Cd36*, lentivirus-m*Cd36*, and lentivirus -*Klf10* for 24 h. $n = 3$ independent experiment. (C) Protein level of KLF10 (left) and its normalization to β-actin (right). (D) Protein levels of palmitoylated CD36. (E) CD36 protein expression in the plasma membrane fractions, and its normalized to ATP1a1. (F) BODIPY staining for lipid droplets in hepatocytes.

Data information: $^{*}P < 0.05$, $^{**}P < 0.01$, $^{***}P < 0.001$. Results are shown as mean ± SD. One-way ANOVA (B–E).
Source data are available online for this figure.