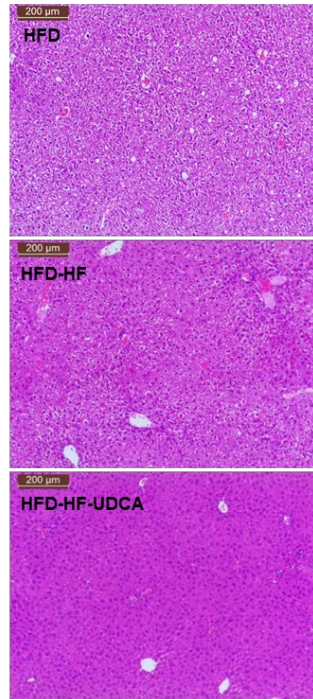
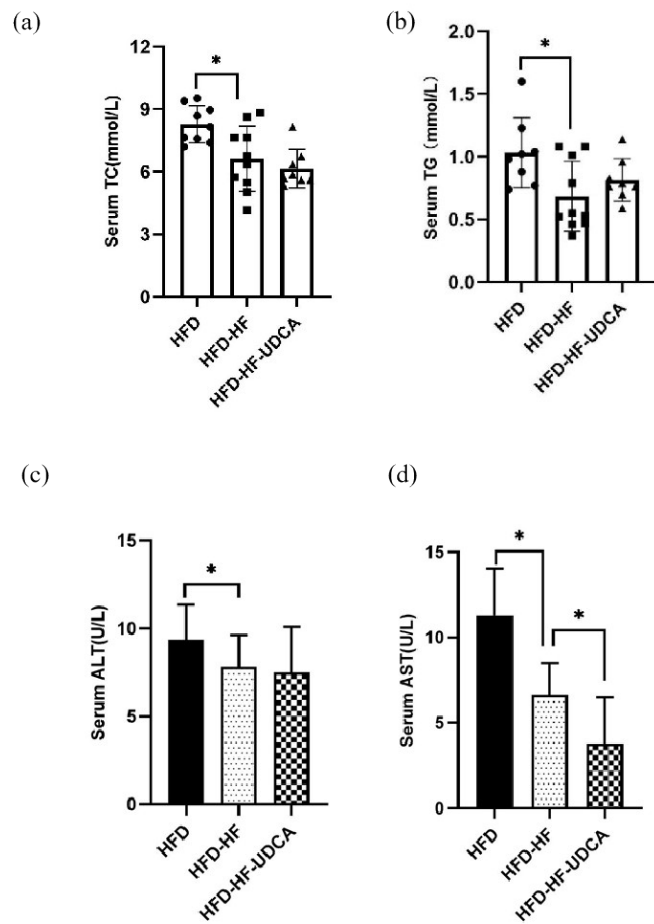


**Supplementary Table 1.** Primers for RT-qPCR

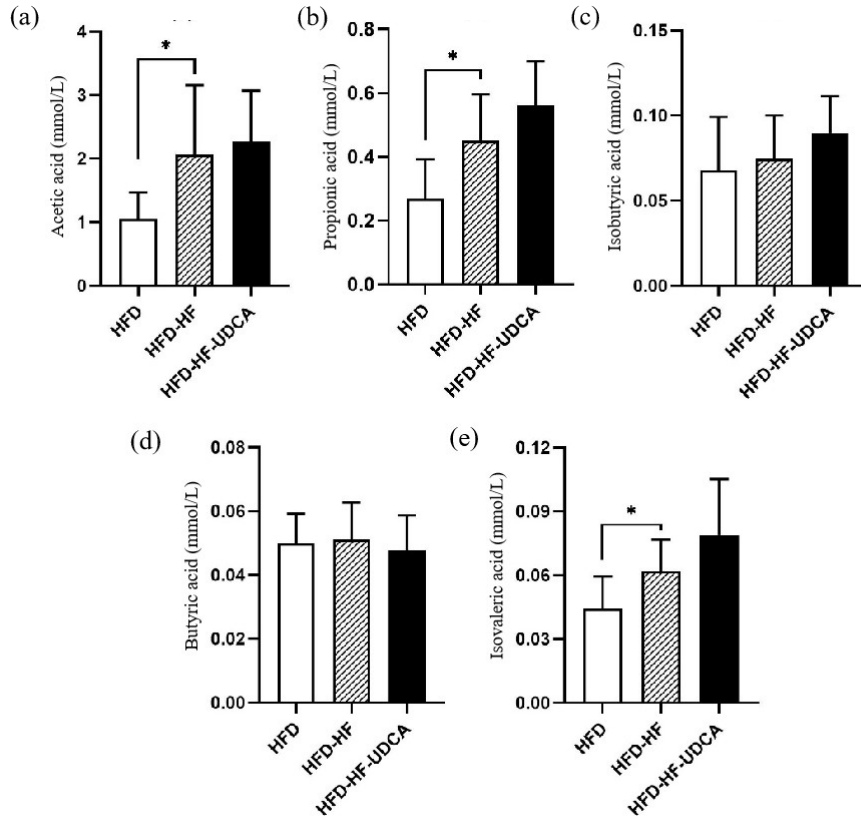
Gene	Primer Sequences
$\beta$ -actin	(F):5'-AGCCATGTACGTAGCCATCCA-3'
	(R):5'-TCTCCGGAGTCCATCACAATG-3'
fxr	(F):5'-TGGGCTCCGAATCCTCTTAGA-3'
	(R):5'-TGGTCCTCAAATAAGATCCTTGG-3'
cyp7a1	(F):5'-AACAACTGCCAGTACTAGATAGC-3'
	(R):5'-GTGTAGAGTGAAGTCCTCCTTAGC-3'
fgf15	(F):5'-GCCATCAAGGACGTCAGCA-3'
	(R):5'-CTTCCTCCGAGTAGCGAATCAG-3'
bsep	(F):5'-CTGCCAAGGATGCTAATGCA-3'
	(R):5'-CGATGGCTACCCTTTGCTTCT-3'
fgfr4	(F):5'-GCATCTTTCAGGGGACACCA-3'
	(R):5'-TTGTACCAGTGACGACCACG-3'
shp	(F):5'-TCTGCAGGTCGTCCGACTATTC-3'
	(R):5'-AGGCAGTGGCTGTGAGATGC-3'
tnf- $\alpha$	(F):5'-TTCTATTCTGCTTGTGG-3'
	(R):5'-ACTTGGTGGTTTGCTACG-3'
il-1 $\beta$	(F):5'-CCAGCTTCAAATCTCACAGCAG-3'
	(R):5'-CTTCTTTGGGTATTGCTTGGGATC-3'
il-6	(F):5'-CCACCAAGAACGATAGTCAA-3'
	(R):5'-TTTCCACGATTTCCCAGA-3'



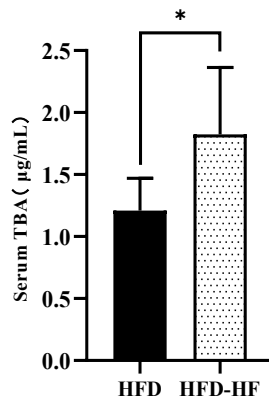
**Supplementary Figure 1.** Hematoxylin-eosin (HE) staining of liver tissue sections



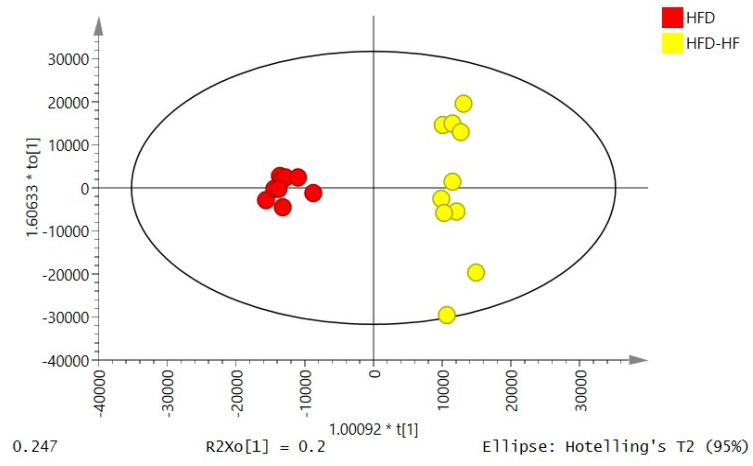
**Supplementary Figure 2.** The TC (a), TG (b), ALT (c), and AST (d) levels in the serum of mice in the HFD, HFD-HF and HFD-HF-UDCA groups



**Supplementary Figure 3.** The determination of fecal short chain fatty acids by gas chromatography. (a)Acetic acid; (b)Propionic acid; (c)Isobutyric; (d)Butyric acid; (e)Isovaleric acid



**Supplementary Figure 4.** Serum TBA levels



**Supplementary Figure 5.** The OPLS-DA score plot of mice faeces metabolomics data.