

Supplementary materials

Table 1. Primer sequences

Target gene	Primer sequences	Orientation
Mouse β -actin	5'-TGTCCACCTTCCAGCAGATGT-3'	Forward
	5'-AGCTCAGTAACAGTCCGCCTAGA-3'	Reverse
Mouse Lpl	5'-TTGCCCTAAGGACCCCTGAA-3'	Forward
	5'-TTGAAGTGGCAGTTAGACACAG-3'	Reverse
Mouse Fas	5'-CATGCACAGAAGGGAAGGAGT-3'	Forward
	5'-ACACAGTGTTCACAGCCAGAA-3'	Reverse
Mouse Acaca	5'-GATGAACCATCTCCGTTGGC-3'	Forward
	5'-GACCCAATTATGAATCGGGAGTG-3'	Reverse
Mouse Hmger	5'-AGCTTGCCCGAATTGTATGTG-3'	Forward
	5'-TCTGTTGTGAACCATGTGACTTC-3'	Reverse

Table 2. Antibodies and Reagents

Reagent or resource	Source	Identifier
Antibodies		
Anti-ZO-1, dilution: 1/1000 for WB	Affinity Biosciences	Cat#AF5145
Anti-Claudin-1, dilution: 1/1000 for WB	Affinity Biosciences	Cat#DF0133
Anti-Occludin, dilution: 1/2000 for WB	Affinity Biosciences	Cat#D7504
Anti-anti-TLR4, dilution: 1/1000 for WB	Affinity Biosciences	Cat#AF7017
Anti-MyD88, dilution: 1/1000 for WB	Affinity Biosciences	Cat#DF6162
Anti-NF- κ B p65, dilution: 1/1000 for WB	Affinity Biosciences	Cat#AF5006
Anti-phospho-NF- κ B p65, dilution: 1/1000 for WB	Affinity Biosciences	Cat#AF2006
Anti-I κ B α , dilution: 1/1000 for WB	Affinity Biosciences	Cat#AF7776
Anti-phospho-I κ B α , dilution: 1/1000 for WB	Affinity Biosciences	Cat#AF2002
Anti-IL-6, dilution: 1/1000 for WB	Affinity Biosciences	Cat#DF6087
Anti-IL-1 β , dilution: 1/1000 for WB	Affinity Biosciences	Cat#AF5103
Anti-IL-10, dilution: 1/1000 for WB	Affinity Biosciences	Cat#DF6894
Anti-PPAR γ , dilution: 1/1000 for WB	Affinity Biosciences	Cat#AF6284
Anti-FASN, dilution: 1/1000 for WB	Affinity Biosciences	Cat#DF6106
Anti-HMGCR, dilution: 1/1000 for WB	Affinity Biosciences	Cat#DF6518
Anti-DGAT1, dilution: 1/2000 for WB	Affinity Biosciences	Cat#DF13368
Anti-SCD1, dilution: 1/1000 for WB	Affinity Biosciences	Cat#DF13253
Anti-SREBP1c, dilution: 1/1000 for WB	Affinity Biosciences	Cat#AF4728
Anti-PPAR α , dilution: 1/4000 for WB	Affinity Biosciences	Cat#AF5301
Anti-CPT1 α , dilution: 1/1000 for WB	Affinity Biosciences	Cat#DF12004
Anti-ACOX1, dilution: 1/1000 for WB	Affinity Biosciences	Cat#DF12046
Anti-FGF21, dilution: 1/2000 for WB	Affinity Biosciences	Cat#DF8974
Anti-IL-22, dilution: 1/2000 for WB	Affinity Biosciences	Cat#DF8343
Anti-NFIL3, dilution: 1/1000 for WB	Affinity Biosciences	Cat#DF3303
Anti-STAT3, dilution: 1/1000 for WB	Affinity Biosciences	Cat#AF6294
Anti-phospho-STAT3, dilution: 1/1000 for WB	Affinity Biosciences	Cat#AF3293

Anti-ANGPTL4, dilution: 1/1000 for WB	Affinity Biosciences	Cat#DF6751
Anti- β -actin, dilution: 1/5000 for WB	Zen Bioscience	Cat#R23613
Goat anti-Rabbit IgG (H+L)-HRP, dilution:1/10000 for WB	HuaAn Biotechnology Co., Ltd	Cat#HA1001

Chemicals and reagents

RIPA lysis buffer	Beyotime Biotechnology	Cat#P0013B
protease and phosphatase inhibitor	Beyotime Biotechnology	Cat#P1045
BCA protein concentration assay kit	Beyotime Biotechnology	Cat#EC0001
Triglyceride (TG) assay kit	Jiancheng Bioengineering	Cat#A110-1-1
Total cholesterol (TC) assay kit	Jiancheng Bioengineering	Cat#A111-1-1
Low-density lipoprotein cholesterol (LDL-C) assay kit	Jiancheng Bioengineering	Cat#A113-1-1
High-density lipoprotein cholesterol (HDL-C) assay kit	Jiancheng Bioengineering	Cat#A112-1-1
Non-esterified fatty acid (NEFA) assay kit	Jiancheng Bioengineering	Cat#A042-2-1
Alanine transaminase (ALT) assay kit	Jiancheng Bioengineering	Cat#C009-3-1
Aspartate aminotransferase (AST) assay kit	Jiancheng Bioengineering	Cat#C010-3-1
Total bile acid (TBA) assay kit	Jiancheng Bioengineering	Cat#E003-2-1
Total antioxidant capacity (T-AOC) assay kit	Jiancheng Bioengineering	Cat#A015-2-1
Reduced glutathione (GSH) assay kit	Jiancheng Bioengineering	Cat#A006-2-1
Superoxide dismutase (SOD) assay kit	Jiancheng Bioengineering	Cat#A001-3
Malondialdehyde (MDA) assay kit	Jiancheng Bioengineering	Cat#A003-1-2
Myeloperoxidase (MPO) assay kit	Jiancheng Bioengineering	Cat#A044-1-1
Mouse interleukin 6 (IL-6) ELISA kit	Ruixin Biotechnology	Cat#RX202049M
Mouse interleukin-10 (IL-10) ELISA kit	Ruixin Biotechnology	Cat#RX203075M
Mouse interleukin-1 β (IL-1 β) ELISA kit	Jianglai Biotechnology	Cat#JL18442
RNAiso Plus	Takara Bio	Cat#9108
PrimeScript [™] RT reagent kit with gDNA Eraser	Takara Bio	Cat#RR047A
TB Green [®] <i>Premix Ex Taq</i> [™] (Tli RNaseH Plus), ROX plus	Takara Bio	Cat#RR42LR
ECL Plus chemiluminescence reagent kit	Yeasen Biotech	Cat#36222ES60

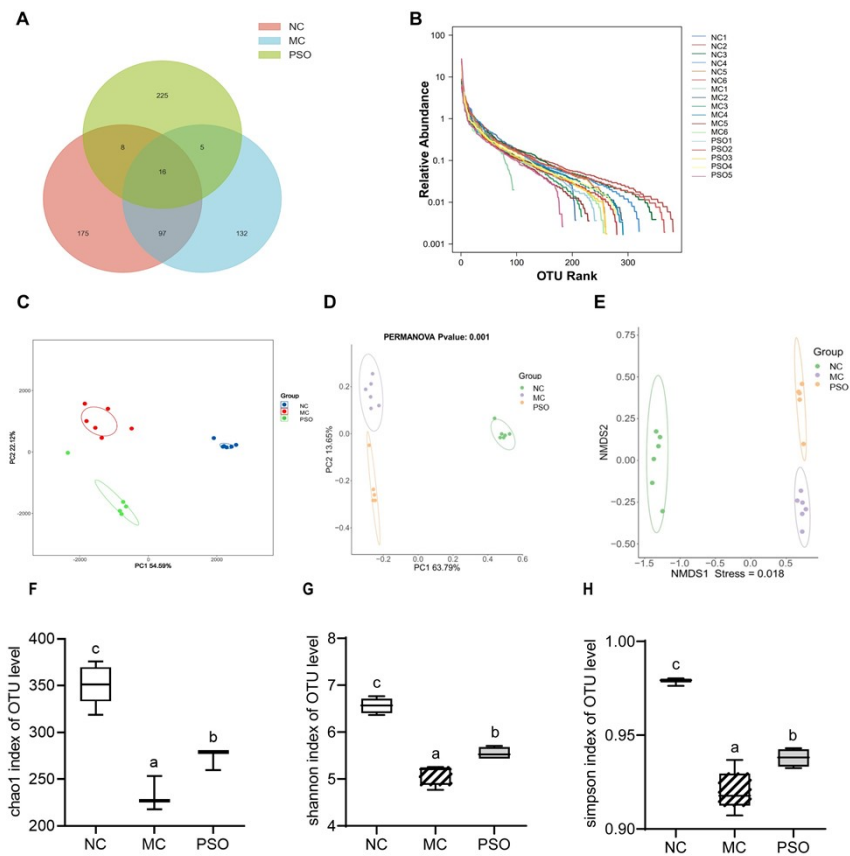


Fig. 1 Effects of PSO on species richness and overall profile of the intestinal microbiome in HFHFD-fed mice. (A) OTU numbers of intestinal bacteria. (B) OTU rank abundance. (C–E) Plots of PCA, UniFrac distance-based PCoA and nonmetric multidimensional scaling (NMDS). (F–H) Chao1 index, Shannon and Simpson index, respectively. Data are shown as means \pm SD. Means with distinct lowercase letter are significantly different ($P < 0.05$).