SUPPLEMENTARY DATA

Supplementary Table 1. The list of mouse primers for RT-qPCR analysis

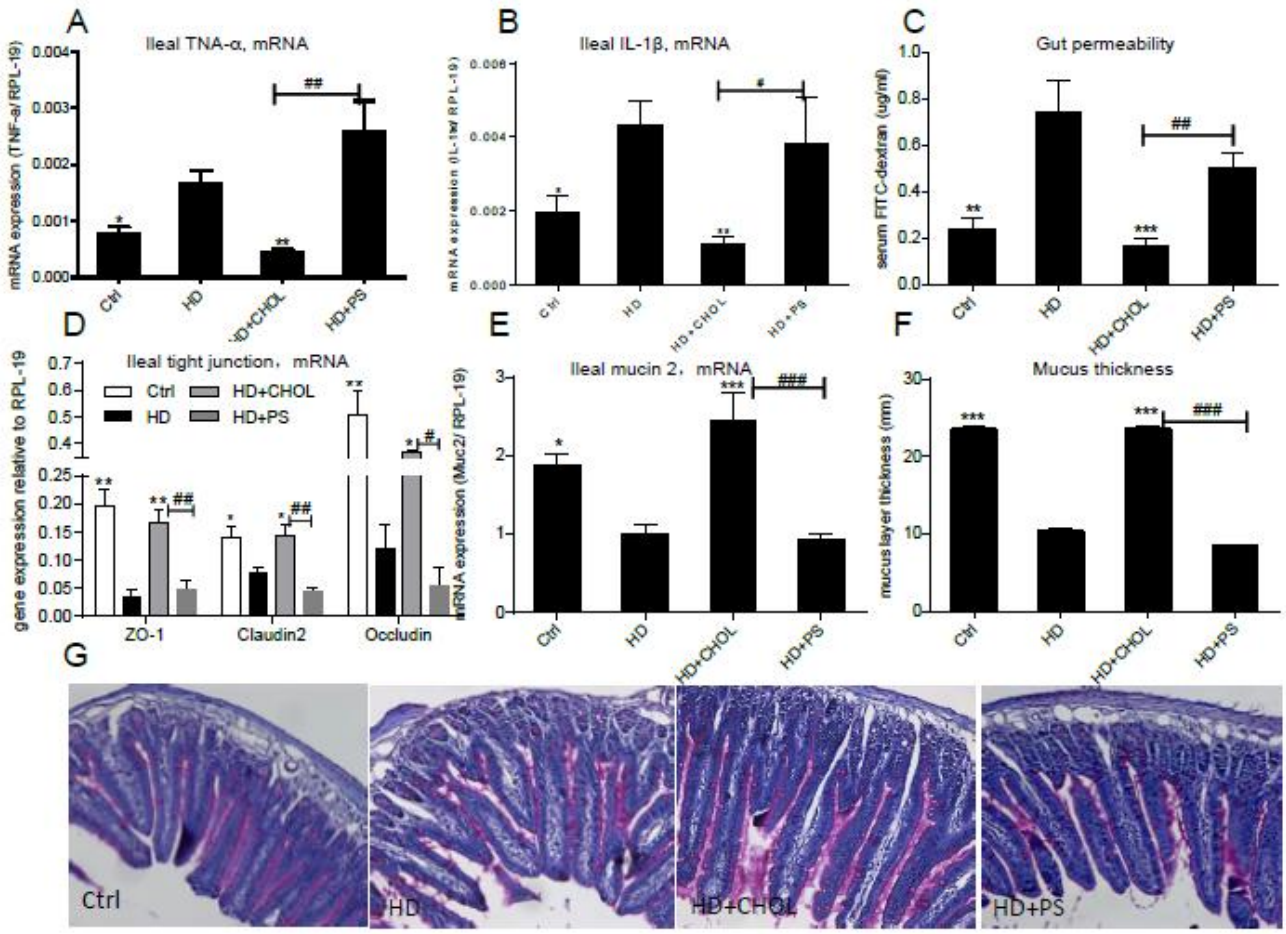
gene	Forward 5' → 3'	Reverse 5' → 3'
TNF-α	TGGGACAGTGACCTGGACTGT	TTCGGAAAGCCCATTTGAGT
iNOS	ACATCGACCCGTCCACAGTAT	CAGAGGGGTAGGCTTGTCTC
MUC2	GCTCGGAACTCCAGAAAGAAG	GCCAGGGAATCGGTAGACAT
RPL-19	GAAGGTCAAAGGGAATGTGTTCA	CCTTGTCTGCCTTCAGCTTGT
Arginase1	GAACCCAACTCTTGGGAAGAC	GGAGAAGGCGTTTGCTTAGTT
Occludin	ATGTCCGGCCGATGCTCTC	TTTGGCTGCTCTTGGGTCTGTAT
ZO-1	ACCCGAAACTGATGCTGTGGATAG	AAATGGCCGGGCAGAACTTGTGTA
Claudin-2	CCTTCGGGACTTCTACTCGC	TCACACATACCCAGTCAGGC
IL-6	CTTCCATCCAGTTGCCTTCTTG	AATTAAGCCTCCGACTTGTGAAG
IL-1β	TCGCTCAGGGTCACAAGAAA	CATCAGAGGCAAGGAGGAAAAC
ColI$_{\alpha 1}$	GCTCCTCTTAGGGGCCACT	CCACGTCTCACCATTGGGG

Supplementary Table 2. The list of microbiota 16S rDNA primers

gene	Forward 5' → 3'	Reverse 5' → 3'
All bacteria	ACTCCTACGGGAGGCAGCAG	ATTACCGCGGCTGCTGG
Firmicutes	GGAGTATGTGGTTTAATTCGAAGCA	AGCTGACGACAACCATGCAC
Bacteriodes	GGARCATGTGGTTTAATTCGATGAT	AGCTGACGACAACCATGCAGG
AKK	CAGCACGTGAAGGTGGGGAC	CCTTGCGGTTGGCTTCAGAT
γ–Proteobacteria	TCGTCAGCTCGTGTYGTGA	GGTAAGGGCCATGATG

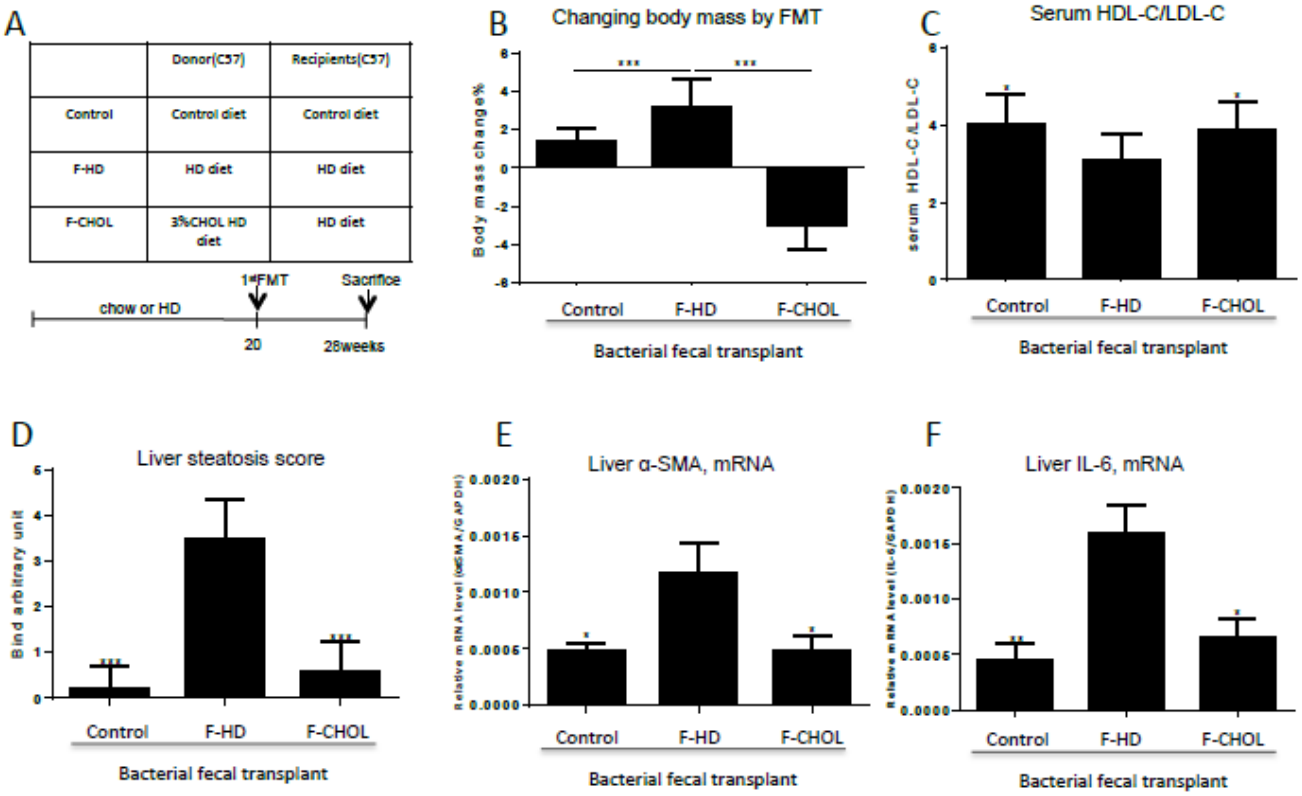
SUPPLEMENTARY DATA

Supplementary Figure 1. Small intestinal inflammation and permeability exerted by HD feeding are ameliorated by cationic polystyrene. The distal region of small intestine of the mice described in Figure 1 was subjected to assessment. (A-B) Inflammation in the ileum was assessed by expression of TNF-α, IL-1β, n = 5-7. (C) Gut permeability was detected by the appearance of FITC-dextran in serum, n = 5-6. (D) Integrity of tight junction in the ileum was measured by mRNA levels of ZO-1, Claudin2, and Occludin, n=6-8. (E) The expression of intestinal mucin, Muc2 in ileum. (F) The mucus layer thickness counting. (G) PAS staining for glycoprotein of mucus in ileum. * or # P<0.05, ** or ## P< 0.01, *** or ### P< 0.001 vs. the HD. Data were Mean ± SEM.



SUPPLEMENTARY DATA

Supplementary Figure 2. The microbes from the cationic polystyrene treatment are sufficient to antagonize the NASH features of recipient mice. The mice, being fed with HD or the control chow for 20 weeks, were used as two recipients, which were subjected to gavage transplant from the donor microbes derived from cationic polystyrene-treated (HD-F-Chol) or polystyrene (HD-F-HD) mice (n=10). (A) Experimental design. (B) Change body mass at the end of FBT. (C) The ratio of plasma HDL-c vs. LDL-c. (D) Liver steatosis and inflammation scores, NAS. (E) Liver fibrosis was assessed by expression of alpha-smooth muscle actin. (F) Liver inflammation was assessed by expression of interleukin-6 by the mice at the end of FBT. * or # P<0.05, ** or ## P< 0.01 vs. the F-HD. Data were Mean ± SEM.



SUPPLEMENTARY DATA

Supplementary Figure 3. Rebalancing of gut microbiota in the recipient mice after fecal bacteria transplant. The gut microbiota at the end of FBT as described the experiment described in Figure 4 were examined. (A) The relative abundance of bacteria in the ileum of recipients was determined by 16S rDNA based qPCR analysis. (B) The fecal bacteria. * or #P<0.05 vs. F-HD. Data were Mean ± SEM.