Supplementary Information (SI) for Environmental Science: Nano.

Supporting material

Co-exposure to a high-fat diet and nanoplastics synergistically exacerbates intestinal microbiota dysbiosis and susceptibility

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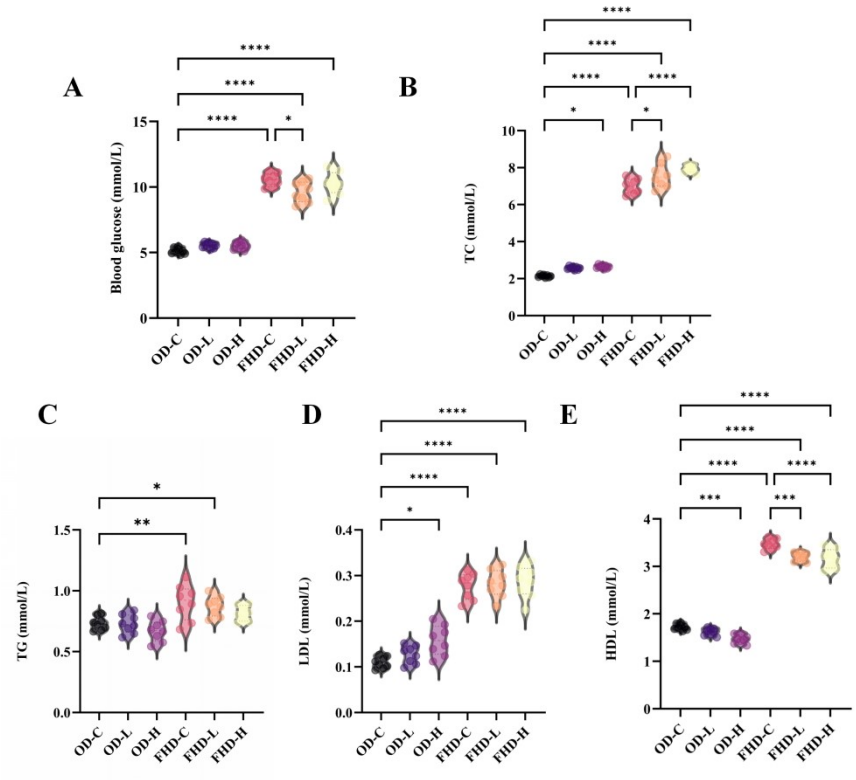

Fig S1. Blood parameters metabolic markers. (A) Blood glucose, (B) Total cholesterol (TC), (C) Triglyceride (TG), (D) Low density lipoprotein (LDL), (E) High density lipoprotein (HDL). One-way ANOVA analysis of variance was conducted * Indicates a statistically significant difference (P<0.05). ** indicates a highly statistically significant difference (P<0.01). *** indicates a extremely statistically significant (P<0.001). **** indicates a extremely statistically significant (P<0.0001).

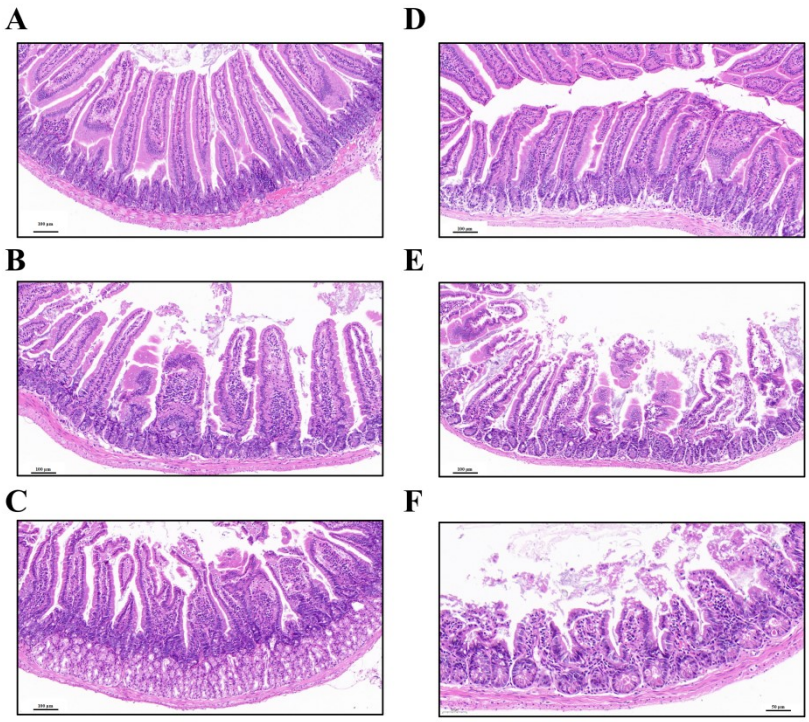

Fig S2. The H&E staining results of the intestinal tissue. (A) OD-C group, (B) OD-L group, (C) OD-H group, (D) HFD-C group, (E) HFD-L group, (F) HFD-H group.

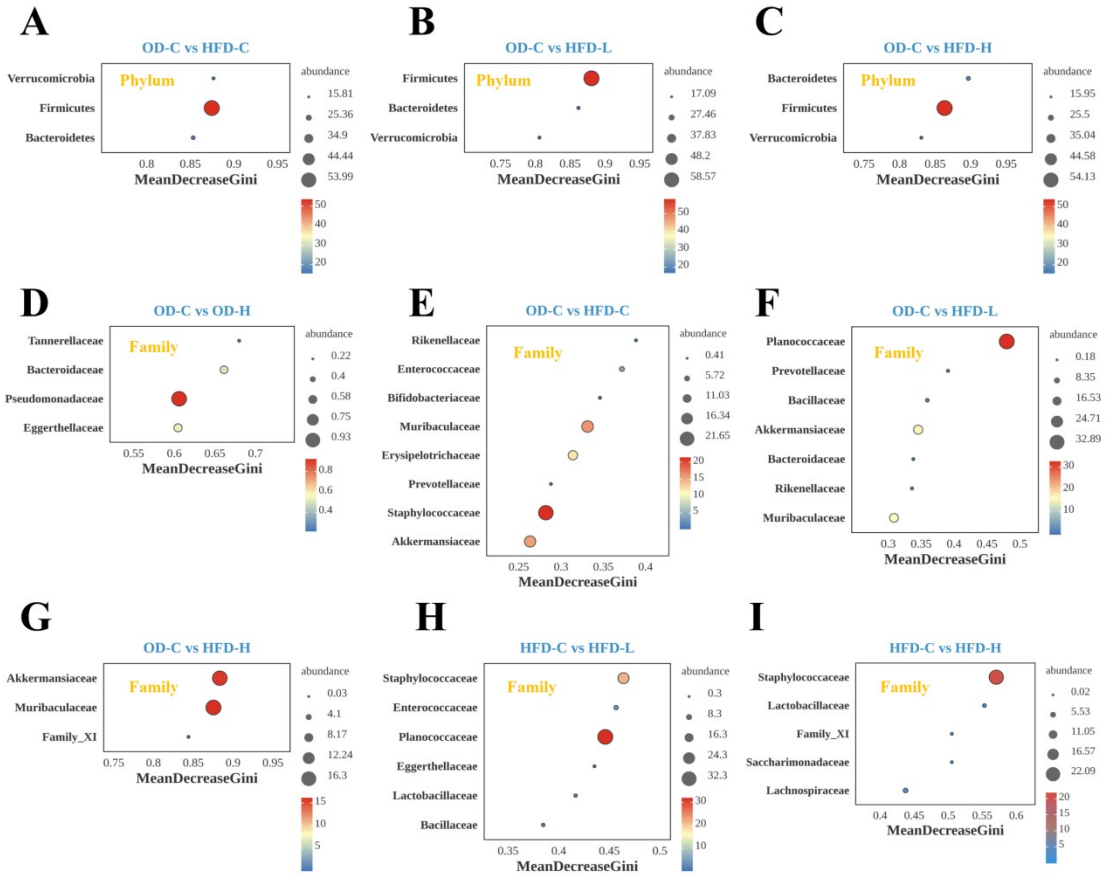

Fig S3. Random forest analysis of intestinal flora composition in different experimental groups. Phylum lever random forest analysis of (A) OD-C VS HFD-C, (B) OD-C VS HFD-L, (C) OD-C VS HFD-H. Family lever random forest analysis of (D) OD-C VS OD-H, (E) OD-C VS HFD-C, (F) OD-C VS HFD-L, (G) OD-C VS HFD-H, (H) HFD-C VS HFD-L, (I) HFD-C VS HFD-H.

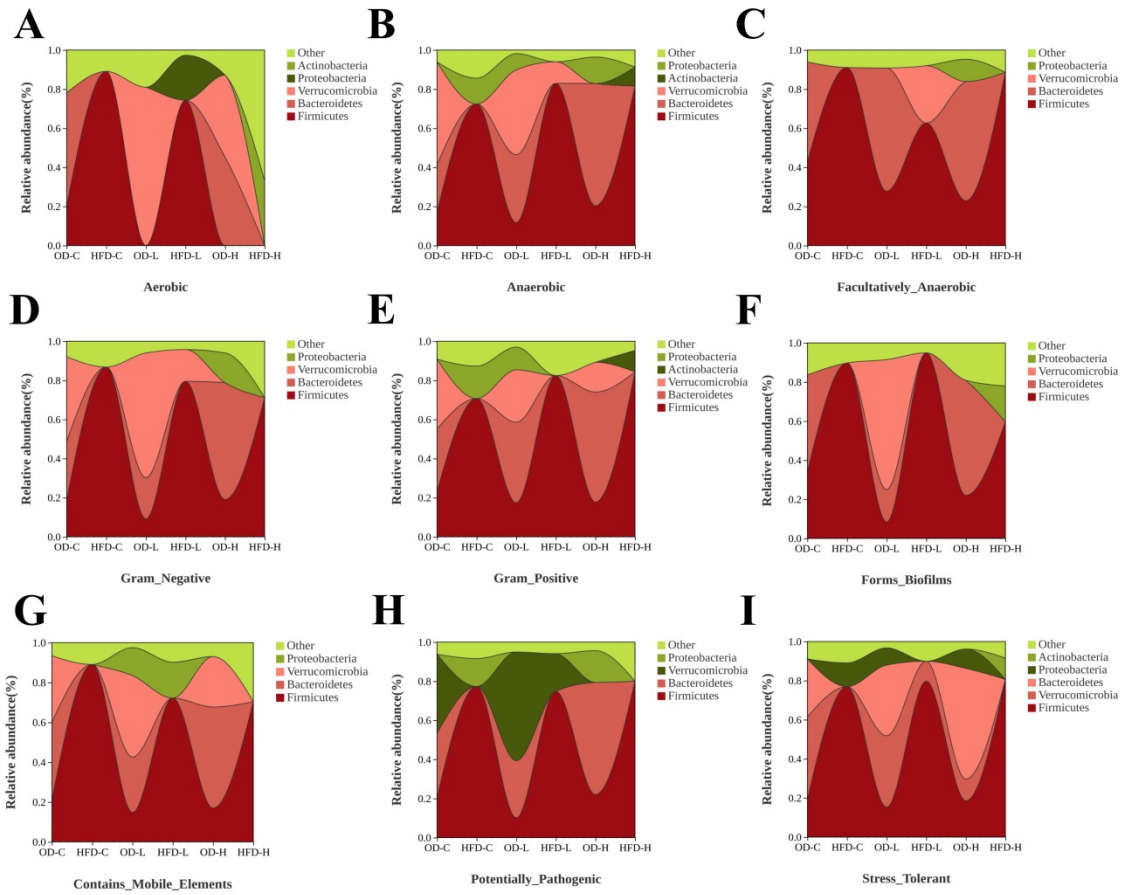

Fig S4. Analysis of intestinal microbial phenotypic differences. Phenotypic abundance river plot of (A) Aerobic, (B) Anaerobic, (C) Facultatively anaerobic, (D) Gram negative, (E) Gram positive, (F) Forms biofilms, (G) Contains mobile elements, (H) Potentially pathogenic, (I) Stress tolerant.

Table S1 Diet composition table of different experimental groups

Groups	PS	Crude_protein	Crude_fat	Crude_fibre	Crude_ash	Protein	Fat	Carbohydrate
	（mg/kg）	（%）	（%）	（%）	（%）	Contribute rate（kcal %）		
OD-C	0	18	4	5	8	24.2	12.4	63.4
OD-L	10	18	4	5	8	24.2	12.4	63.4
OD-H	100	18	4	5	8	24.2	12.4	63.4
HFD-C	0	23.656	23.597	5.826	5.244	20	45	35
HFD-L	10	23.656	23.597	5.826	5.244	20	45	35
HFD-H	100	23.656	23.597	5.826	5.244	20	45	35

Table S2. Sequence list of primers in mice

Primer name	Primer sequence
Mus-Gapdh	F:TACCCCCAATGTGTCCGTC R:AAGAGTGGGAGTTGCTGTTGAAG
Actb	F:GTGACGTTGACATCCGTAAAGA R:GCCGGACTCATCGTACTCC
Occludin	F:TGAAAGTCCACCTCCTTACAGA R:CCGGATAAAAAGAGTACGCTGG
Muc2	F:ATGCCCACCTCCTCAAAGAC R:GTAGTTTCCGTTGGAACAGTGAA
Reg3a	F:TCACCTGGTCCTCAACAGTATT R:GGAGCGATAAGCCTTGTAACC
Reg3b	F:ACTCCCTGAAGAATATACCCTCC R:CGCTATTGAGCACAGATACGAG
TNF-α	F:CAGGCGGTGCCTATGTCTC R:CGATCACCCCGAAGTTCAGTAG
IL-6	F:CTGCAAGAGACTTCCATCCAG R:AGTGGTATAGACAGGTCTGTTGG
IL-10	F:CTTACTGACTGGCATGAGGATCA R:GCAGCTCTAGGAGCATGTGG