

S8 Table. Eight abundant genera in all groups genus. Data are presented as the means \pm S.D and analyzed by Mann-Whitney test, *** P <0.001, ** P <0.01 and * P <0.05 vs the HFD group.

Phylum	Genus	Control (%)	HFD (%)	HFD+M (%)	HDHF+FO600 (%)	HFD+KO600 (%)	HFD+FO300KO300 (%)	HFD+FO400KO200 (%)	HFD+FO450KO150 (%)
<i>Bacteroidetes</i>	<i>Barnesiella</i>	38.02 \pm 4.63 \uparrow ***	26.33 \pm 2.13	29.87 \pm 3.26* \uparrow	17.05 \pm 2.54** \downarrow	21.36 \pm 4.23* \downarrow	34.78 \pm 3.87** \uparrow	31.91 \pm 3.63** \uparrow	19.98 \pm 4.83** \downarrow
<i>Proteobacteria</i>	<i>Bilophila</i>	1.4 \pm 0.74 \downarrow ***	4.67 \pm 1.11	5.32 \pm 1.37 \uparrow	10.82 \pm 3.63*** \uparrow	10.56 \pm 2.71*** \uparrow	1.26 \pm 0.53*** \downarrow	2.67 \pm 1.13** \downarrow	6.71 \pm 1.21** \uparrow
<i>Firmicutes</i>	<i>Lactobacillus</i>	0.81 \pm 0.03 \downarrow ***	8.00 \pm 2.11	9.69 \pm 5.41* \uparrow	1.42 \pm 0.25*** \downarrow	6.19 \pm 1.77* \downarrow	1.08 \pm 0.42*** \downarrow	5.56 \pm 1.20* \downarrow	3.75 \pm 1.10* \downarrow
<i>Firmicutes</i>	<i>Clostridium XIVa</i>	0.88 \pm 0.14 \downarrow ***	1.97 \pm 0.86	1.63 \pm 0.32 \downarrow	3.66 \pm 1.14** \uparrow	5.68 \pm 1.86*** \uparrow	10.8 \pm 3.16*** \downarrow	4.41 \pm 1.29** \uparrow	5.29 \pm 1.21*** \uparrow
<i>Bacteroidetes</i>	<i>Tannerella</i>	3.9 \pm 1.11 \uparrow ***	2.65 \pm 0.27	2.93 \pm 1.19* \uparrow	1.93 \pm 0.36** \downarrow	2.13 \pm 0.29* \downarrow	1.97 \pm 0.73* \downarrow	3.64 \pm 1.20*** \uparrow	2.75 \pm 1.34 \downarrow
<i>Proteobacteria</i>	<i>Helicobacter</i>	1.68 \pm 0.21 \downarrow *	2.79 \pm 0.77	2.12 \pm 0.77 \downarrow	1.19 \pm 0.43* \downarrow	2.59 \pm 1.10 \downarrow	2.21 \pm 0.62 \downarrow	1.85 \pm 0.29* \downarrow	7.05 \pm 2.10 \uparrow
<i>Bacteroidetes</i>	<i>Coprobacter</i>	3.03 \pm 0.43 \downarrow ***	3.8 \pm 0.17	2.68 \pm 0.21*** \downarrow	1.92 \pm 0.28*** \downarrow	1.58 \pm 0.75*** \downarrow	2.71 \pm 1.17 \downarrow	2.34 \pm 0.39** \downarrow	2.92 \pm 0.98 \downarrow
<i>Bacteroidetes</i>	<i>Bacteroides</i>	7.33 \pm 1.76 \uparrow ***	2.14 \pm 0.54	1.57 \pm 0.21* \downarrow	2.64 \pm 0.29 \uparrow	1.04 \pm 0.87* \downarrow	2.65 \pm 1.09 \uparrow	1.91 \pm 0.76 \downarrow	1.04 \pm 0.66** \downarrow