

Supplementary materials

**Table S1.** Levels of BA species (nmol/g)

BA species	control	HFCCD	LF	P for control vs. HFCCD	P for HFCCD vs. LF
THCA	0.98±1.08	0±0	36.93±25.22	0.050	<b>0.005</b>
T- $\alpha$ -MCA	22.62±16.97	74.25±56.44	2260.44±1731.15	0.057	<b>0.011</b>
T- $\beta$ -MCA	64.57±42.09	181.61±98.78	4357.61±4026.13	<b>0.023</b>	<b>0.029</b>
TCA	60.45±45.1	968.21±1188.61	24394.09±23912.83	0.091	<b>0.038</b>
TDCA	51.16±37.81	765.73±536.4	4678.47±4677.87	<b>0.009</b>	0.069
TLCA	0.91±1.63	4.24±2.61	21.22±16.95	<b>0.024</b>	<b>0.036</b>
GCA	0±0	7.02±6.32	47.55±27.76	<b>0.022</b>	<b>0.006</b>
GDCA	2.33±1.57	28.75±24.03	16.37±10.53	<b>0.023</b>	0.275
CA	1103.16±1339.7	7988.94±8357.93	20332.98±12236.3	0.074	0.069
HCA	144.11±74.58	20.8±7.13	29.65±24.93	<b>0.002</b>	0.422
$\alpha$ -MCA	1152.55±615.7	1106.58±442.81	1751.04±637.83	0.885	0.069
$\beta$ -MCA	3137.58±2055.88	2774.44±1551.51	4202.42±1690.4	0.737	0.158
ACA	651.95±755.72	483.41±210.32	538.2±274.2	0.610	0.706
CDCA	37.27±29.64	297.62±227.41	530.11±215.62	<b>0.019</b>	0.099
DCA	5193.04±2732.03	20003.42±3366.16	14881.35±4071.76	<b>&lt;0.001</b>	<b>0.039</b>
HDCA	220.36±84.17	222.85±27.86	115.52±62.45	0.947	<b>0.003</b>
UDCA	101.6±47.43	54.67±46.85	162.44±60.11	0.115	<b>0.006</b>
nutriCA	13.28±8.78	4.88±5.36	26.14±9.94	0.073	<b>0.001</b>
12-ketoDCA	546.34±292.83	1873.68±426.35	1112.94±376.45	<b>&lt;0.001</b>	<b>0.008</b>
LCA	175.9±90.02	186.63±99.39	100.34±57.86	0.849	0.096
iso-LCA	63.54±60.14	32.82±13.34	10.35±9.34	0.250	<b>0.007</b>
$\omega$ -MCA	3274.38±987.89	1610.58±335.73	1577.52±839.91	<b>0.003</b>	0.930
Conjugated BAs	203.01±132.72	2029.81±1737.32	35812.66±33892.26	<b>0.028</b>	<b>0.035</b>
BAs	16018.08±8115.82	38691.12±13759.36	81183.69±39867.46	<b>0.006</b>	<b>0.033</b>

Abbreviation: THCA, Taurohyocholic Acid; T- $\alpha$ -MCA, Tauro-Alpha-Muricholic Acid; T- $\beta$ -MCA, Tauro-Beta-Muricholic Acid; TCA, Taurocholic Acid; TDCA, Taurodeoxycholic Acid; TLCA, Tauroolithocholic Acid; GCA, Glycocholic Acid; GDCA, Glycodeoxycholic Acid; CA, Cholic Acid; HCA, Hyocholic Acid;  $\alpha$ -MCA, Alpha-Muricholic Acid;  $\beta$ -MCA, Beta-Muricholic Acid; ACA, Allocholic Acid; CDCA, Chenodeoxycholic Acid; DCA, Deoxycholic Acid; HDCA, Hyodeoxycholic Acid; UDCA, Ursodeoxycholic Acid; nutriCA, Nutriacholic Acid; 12-ketoDCA, 12-Ketodeoxycholic Acid; LCA, Lithocholic Acid; iso-LCA, Isolithocholic Acid;  $\omega$ -MCA, Omega-Muricholic Acid.