

Supplementary material_Tables

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Table S1 Normalized peak areas of serum metabolites in the normal control, hyperlipidemic hamsters , and berberine treated hamsters (n=5)

Identified compounds	Normal controls			Hyperlipidaemic hamsters			Hyperlipidaemic hamsters treated with berberine		
	Mean	±	SD	Mean	±	SD	Mean	±	SD
Tricosanoic acid	35464	±	11177	77947	±	28377**	76785	±	58248*
Decanoic acid	117981	±	60711	530569	±	202049**	424731	±	302975
Monooleoylglycerol	1275082	±	500640	6521185	±	2463551**	5482852	±	3280491
9-Octadecenoic acid	229072	±	78352	2322880	±	572764**	1626411	±	872112**††
9,12-Octadecadienoic acid	355574	±	73804	3788512	±	978330**	2524575	±	118332**††
Teradecanoic acid	1704975	±	996442	22989500	±	5937818**	18339466	±	11775625††
Lauric acid	633871	±	143890	33785333	±	4883372**	24439933	±	8194419**†
Octadecanoic acid	525568	±	55917	2492915	±	432841*	1103802	±	933060**†
9-hexadecenoic acid	9968538	±	2103638	7262175	±	800781*	10021778	±	6080046
Tetracosanoic acid	74006	±	29555	193621	±	67782**	165746	±	137190*
Hydroxyproline	1605215	±	265701	2504633	±	436325**	1993845	±	713611
Valine	15952472	±	6366152	25673800	±	7277468*	19110900	±	2097260†
Proline	18145100	±	3611177	30500083	±	3867550*	21874115	±	7231196††
Cholesterol	13692017	±	2323996	51852733	±	8015496**	40857114	±	31165588*
Allantoin	146641	±	49706	304867	±	80331**	237899	±	73914
Succinic acid	954024	±	390828	470967	±	231280*	610560	±	377180
Ornithine	13799967	±	3821767	20872717	±	2669624**	13446636	±	5104305†
Arginine	2411950	±	470934	3555860	±	495637**	2359985	±	593510††
Galacturonic acid	395804	±	112573	569147	±	168617*	425518	±	115239††
myo-Inositol-phosphate	2582162	±	297636	4318088	±	816224**	3615100	±	2084208
Erythronic acid	145240	±	68750	292096	±	159961**	235642	±	175921**†
Cholic acid	96270	±	30943	128356	±	85339	592847	±	393184**†

Statistical significance relative to normal control group, *p < 0.05; **p<0.01 (One-way ANOVA; mean ± SD);

†, ††: Statistical significance relative to HF control group, †p < 0.05; ††p<0.01 (One-way ANOVA ; mean ± SD).

Table S2 The amount of bile acids in hamsters gall bladder

Bile acids	C (Mean ± SE)	CB (Mean ± SE)	HF (Mean ± SE)	HFB (Mean ± SE)
Concentration (mM)				
GCA	9.454 ± 1.594	16.073 ± 3.584*	11.992 ± 2.263	16.583 ± 4.625
TCA	7.169 ± 1.104	12.281 ± 3.566*	7.116 ± 1.113	14.304 ± 7.737
CA	3.928 ± 0.794	3.677 ± 1.243	5.230 ± 1.577	1.565 ± 0.556**
DCA+CDCA	0.244 ± 0.074	0.124 ± 0.064*	0.462 ± 0.091	0.070 ± 0.045**
UDCA	0.101 ± 0.034	0.180 ± 0.072	0.615 ± 0.204	0.155 ± 0.083*
LCA	0.018 ± 0.006	0.033 ± 0.005**	0.085 ± 0.039	0.090 ± 0.049
Amount (nM)				
GCA	113.83 ± 66.88	490.09 ± 215.75*	193.30 ± 71.17	500.37 ± 280.75*
TCA	86.02 ± 52.36	359.55 ± 180.86**	114.14 ± 38.07	438.20 ± 322.42*
CA	45.61 ± 23.45	97.47 ± 55.68	84.15 ± 35.13	44.08 ± 21.54
DCA+CDCA	2.86 ± 1.73	2.92 ± 1.46	7.38 ± 2.49	1.98 ± 1.41
UDCA	1.17 ± 0.65	4.62 ± 3.09	9.84 ± 4.05	4.28 ± 2.11
LCA	0.20 ± 0.10	0.94 ± 0.52	1.32 ± 0.57	2.62 ± 1.59
Total weight of gall bladder (mg)				
	12.2 ± 7.4	33.5 ± 15.16	14.8 ± 6.18	29.17 ± 11.99 *

*, p<0.05; **, p<0.01, relative to the controls. C, Hamsters control; CB, Control+BBR (100mg/kg, i.g.); HF, Hamsters with high fatty diet; HFB, Hamsters with high fatty diet+BBR (100mg/kg, i.g.).

CA, cholic acid; GCA, glycocholic acid; TCA, Taurocholic acid; DCA, deoxycholic acid; CDCA, chenodeoxycholic acid; UDCA, Ursodeoxycholic acid; LCA, lithocholic acid.

Table S3 The amount of bile acids in gut content of hamsters

Bile acids	C		CB		HF		HFB	
	(Mean ± SE)		(Mean ± SE)		(Mean ± SE)		(Mean ± SE)	
Concentration (mM)								
GCA	/		0.50 ± 0.19		0.96 ± 0.37		/	
TCA	/		/		/		/	
CA	1.13 ± 0.30		0.71 ± 0.71		1.64 ± 0.18		2.31 ± 1.64	
DCA+CDCA	388.03 ± 53.17		590.48 ± 141.10 *		670.21 ± 43.60		1075.21 ± 445.73	
UDCA	31.91 ± 4.14		55.13 ± 16.14 *		79.23 ± 6.75		88.84 ± 46.31	
LCA	347.55 ± 64.58		304.49 ± 41.80		731.80 ± 23.93		908.86 ± 374.32	
Amount (nM)								
GCA	/		1.20 ± 0.40		2.01 ± 0.65		/	
TCA	/		/		/		/	
CA	1.89 ± 0.46		1.74 ± 1.79		3.61 ± 0.92		6.13 ± 3.86	
DCA+CDCA	653.44 ± 132.14		1456.56 ± 465.97 *		1459.80 ± 222.76		3036.79 ± 1373.39 *	
UDCA	53.85 ± 11.59		136.01 ± 51.13 *		171.61 ± 17.01		255.69 ± 151.28	
LCA	578.75 ± 102.15		742.89 ± 136.69		1590.09 ± 181.09		2585.63 ± 1229.71	
Total weight of gut content (g)								
	1.68 ± 0.15		2.44 ± 0.26 **		2.17 ± 0.25		2.80 ± 0.39 *	

/, below limit of detection. *, p<0.05, relative to the controls. C, Hamsters control; CB, Control+BBR (100mg/kg, i.g.); HF, Hamsters with high fatty diet; HFB, Hamsters with high fatty diet+BBR (100mg/kg, i.g.).

CA, cholic acid; GCA, glycocholic acid; TCA, Taurocholic acid; DCA, deoxycholic acid; CDCA, chenodeoxycholic acid; UDCA, Ursodeoxycholic acid; LCA, lithocholic acid.