

**Additional file 6: Table S5.** Fecal Concentrations of Remaining Bile Acids Detected at Baseline and Six Weeks of Arabinosyloxan or Microcrystalline Cellulose Supplementation.

Fecal Bile Acids (nmol/g)	Arabinosyloxan (n=15)				Microcrystalline Cellulose (n=16)				Between Group Change <i>p</i> value
	Baseline	Week 6	Within Group <i>p</i> value	Change (W6-BL)	Baseline	Week 6	Within Group <i>p</i> value	Change (W6-BL)	
Tauro- $\alpha$ -muricholic acid	1.5 $\pm$ 1.9	1.9 $\pm$ 3.5	0.69	0.4 $\pm$ 0.29	1.5 $\pm$ 2.5	1.1 $\pm$ 2.9	0.52	-0.4 $\pm$ 2.2	0.38
$\alpha$ -Muricholic acid	0.81 $\pm$ 1.52 <sup>a</sup>	0.12 $\pm$ 0.44 <sup>a</sup>	0.18	-0.68 $\pm$ 1.65 <sup>a</sup>	0.44 $\pm$ 1.56	0.17 $\pm$ 0.51	0.77	-0.26 $\pm$ 1.69	0.53
$\beta$ -Muricholic acid	0.49 $\pm$ 1.36	0.11 $\pm$ 0.26	0.45	-0.38 $\pm$ 1.41	0.23 $\pm$ 0.42 <sup>a</sup>	0.43 $\pm$ 0.83 <sup>a</sup>	0.59	0.21 $\pm$ 0.90 <sup>a</sup>	0.23
$\lambda$ -Muricholic acid	7.5 $\pm$ 15.3 <sup>a</sup>	2.6 $\pm$ 3.9 <sup>a</sup>	0.36	-4.9 $\pm$ 15.3 <sup>a</sup>	0.6 $\pm$ 1.2	6.3 $\pm$ 15.5	0.23	5.6 $\pm$ 15.3	0.05
$\omega$ -Muricholic acid	115.3 $\pm$ 237.7 <sup>a</sup>	74.4 $\pm$ 85.4 <sup>a</sup>	0.67	-40.9 $\pm$ 226.0 <sup>a</sup>	28.9 $\pm$ 55.0	174.1 $\pm$ 439.6	0.41	145.2 $\pm$ 433.2	0.12
Dehydrocholic acid	2.8 $\pm$ 4.0	3.6 $\pm$ 6.1	0.68	0.8 $\pm$ 6.9	1.9 $\pm$ 3.5	1.1 $\pm$ 2.6	0.49	-0.8 $\pm$ 4.0	0.31
Glycohyocholic acid	0.02 $\pm$ 0.06 <sup>a</sup>	0.00 $\pm$ 0.00 <sup>a</sup>	0.67	-0.02 $\pm$ 0.06 <sup>a</sup>	0.02 $\pm$ 0.08	0.03 $\pm$ 0.12	0.75	0.01 $\pm$ 0.15	0.69
Glycohyodeoxycholic acid	0.08 $\pm$ 0.11	0.03 $\pm$ 0.03	0.28	-0.05 $\pm$ 0.12	0.09 $\pm$ 0.14	0.04 $\pm$ 0.08	0.06	-0.05 $\pm$ 0.10	1.00
Glycoursodeoxycholic acid	2.1 $\pm$ 3.3 <sup>a</sup>	1.8 $\pm$ 2.1 <sup>a</sup>	0.61	-0.2 $\pm$ 1.8 <sup>a</sup>	2.1 $\pm$ 2.9	0.9 $\pm$ 1.1	0.14	-1.2 $\pm$ 2.6	0.78
Taurodeoxycholic acid	4.3 $\pm$ 4.9	9.0 $\pm$ 13.0	0.25	4.7 $\pm$ 13.4	13.9 $\pm$ 24.3 <sup>a</sup>	1.4 $\pm$ 2.2 <sup>a</sup>	<b>0.04</b>	-12.5 $\pm$ 23.8 <sup>a</sup>	<b>0.014</b>
Taurohyocholic acid	0.06 $\pm$ 0.23 <sup>a</sup>	0.06 $\pm$ 0.14 <sup>a</sup>	0.91	0.00 $\pm$ 0.28 <sup>a</sup>	0.03 $\pm$ 0.07	0.02 $\pm$ 0.07	0.85	-0.01 $\pm$ 0.10	0.88
Ursodeoxycholic acid	510.0 $\pm$ 1084.6 <sup>a</sup>	147.1 $\pm$ 209.7 <sup>a</sup>	0.28	-362.9 $\pm$ 997.7 <sup>a</sup>	25.3 $\pm$ 37.6	283.1 $\pm$ 772.9	0.45	257.9 $\pm$ 772.0	<b>0.017</b>
Norursodeoxycholic acid	0.63 $\pm$ 0.83	0.43 $\pm$ 0.58	0.52	-0.20 $\pm$ 0.98	0.52 $\pm$ 0.65	0.19 $\pm$ 0.41	0.11	-0.33 $\pm$ 0.80	0.58
12-Ketolithocholic acid	0.46 $\pm$ 1.03	0.44 $\pm$ 0.87	0.87	-0.02 $\pm$ 1.27	0.61 $\pm$ 0.82	0.32 $\pm$ 0.54	0.24	-0.29 $\pm$ 0.88	0.64
6,7-diKetolithocholic acid	0.10 $\pm$ 0.21	0.01 $\pm$ 0.05	0.13	-0.09 $\pm$ 0.18	0.45 $\pm$ 0.73	0.23 $\pm$ 0.33	0.30	-0.23 $\pm$ 0.78	0.64
3-Oxocholeic acid	1.4 $\pm$ 4.6 <sup>a</sup>	1.4 $\pm$ 2.9 <sup>a</sup>	0.92	0.0 $\pm$ 4.3 <sup>a</sup>	0.1 $\pm$ 0.2	3.9 $\pm$ 10.5	0.27	3.8 $\pm$ 10.5	0.27
diOxolithocholic acid	1.2 $\pm$ 1.0	0.9 $\pm$ 1.4	0.39	-0.3 $\pm$ 1.8	0.88 $\pm$ 0.84	0.42 $\pm$ 0.55	0.10	-0.46 $\pm$ 0.99	0.80
3 $\beta$ 7 $\alpha$ -diOH-5-cholestenoic acid	0.09 $\pm$ 0.19	0.10 $\pm$ 0.22	0.95	0.01 $\pm$ 0.33	0.08 $\pm$ 0.31 <sup>a</sup>	0.04 $\pm$ 0.17 <sup>a</sup>	0.85	-0.04 $\pm$ 0.36 <sup>a</sup>	0.76
Allocholic acid 3-SO <sub>4</sub> <sup>2-</sup>	68.6 $\pm$ 177.8	50.2 $\pm$ 140.0	0.84	-18.5 $\pm$ 206.0	72.5 $\pm$ 194.8	49.3 $\pm$ 123.3	0.54	-23.2 $\pm$ 118.9	0.94
Glycocholic acid 3-SO <sub>4</sub> <sup>2-</sup>	0.01 $\pm$ 0.03	0.01 $\pm$ 0.04	0.98	0.00 $\pm$ 0.05	0.01 $\pm$ 0.04	0.00 $\pm$ 0.01	0.36	-0.01 $\pm$ 0.04	0.67
Glycochenodeoxycholic acid 3-SO <sub>4</sub> <sup>2-</sup>	0.22 $\pm$ 0.60 <sup>a</sup>	0.12 $\pm$ 0.27 <sup>a</sup>	0.73	-0.10 $\pm$ 0.70 <sup>a</sup>	0.27 $\pm$ 0.51	0.12 $\pm$ 0.25	0.25	-0.15 $\pm$ 0.58	0.94
Glycoursodeoxycholic acid 3-SO <sub>4</sub> <sup>2-</sup>	0.16 $\pm$ 0.34	0.04 $\pm$ 0.08	0.22	-0.12 $\pm$ 0.33	0.04 $\pm$ 0.12	0.09 $\pm$ 0.29	0.50	0.05 $\pm$ 0.18	0.08
Taurolithocholic acid 3-SO <sub>4</sub> <sup>2-</sup>	1.5 $\pm$ 1.1	0.7 $\pm$ 0.9	0.06	-0.8 $\pm$ 1.5	1.9 $\pm$ 3.4 <sup>a</sup>	1.2 $\pm$ 1.5 <sup>a</sup>	0.58	-0.8 $\pm$ 3.8 <sup>a</sup>	1.00
Taurodeoxycholic acid 3-SO <sub>4</sub> <sup>2-</sup>	0.17 $\pm$ 0.20	0.57 $\pm$ 1.68	0.66	0.39 $\pm$ 1.56	0.44 $\pm$ 0.92 <sup>a</sup>	0.06 $\pm$ 0.09 <sup>a</sup>	0.13	-0.39 $\pm$ 0.94 <sup>a</sup>	0.06
Taurochenodeoxycholic acid 3-SO <sub>4</sub> <sup>2-</sup>	0.18 $\pm$ 0.39	0.21 $\pm$ 0.38	0.73	0.03 $\pm$ 0.60	0.22 $\pm$ 0.49	0.11 $\pm$ 0.26	0.32	-0.12 $\pm$ 0.54	0.82
Tauroursodeoxycholic acid 3-SO <sub>4</sub> <sup>2-</sup>	0.11 $\pm$ 0.18	0.02 $\pm$ 0.08	0.12	-0.08 $\pm$ 0.21	0.05 $\pm$ 0.13	0.02 $\pm$ 0.08	0.46	-0.03 $\pm$ 0.16	0.34
Chenodeoxycholic acid 3-glucuronide	0.18 $\pm$ 0.46	0.17 $\pm$ 0.44	0.98	-0.01 $\pm$ 0.48	0.16 $\pm$ 0.43	0.23 $\pm$ 0.50	0.84	0.08 $\pm$ 0.72	0.62
Chenodeoxycholic acid 24-glucuronide	0.06 $\pm$ 0.12	0.08 $\pm$ 0.14	0.76	0.02 $\pm$ 0.18	0.09 $\pm$ 0.14	0.05 $\pm$ 0.11	0.45	-0.04 $\pm$ 0.20	0.42
Lithocholic acid 24-glucuronide	0.00 $\pm$ 0.00	0.09 $\pm$ 0.19	0.13	0.09 $\pm$ 0.19	0.07 $\pm$ 0.19	0.05 $\pm$ 0.18	0.86	-0.03 $\pm$ 0.28	0.29

Listed bile acids (29 compounds) were detected in <90% of fecal samples. Statistical significances of within-group shifts were determined by paired permutational *t*-tests, while between-group differences (AX vs MCC; W6-BL, week 6 - baseline) were determined by unpaired permutational *t*-tests. Data are means  $\pm$  SD. Statistical significance was set at *p*<0.01, bolded *p* values are approaching statistical significance (*p*<0.05). <sup>a</sup> One outlier >5\*SD from the mean was excluded.