

Additional file 10: Table S4. Multiple Linear Regression Analyses Between Arabinoxylan-Induced Fecal SCFA Responses and Bacterial Features¹.

		Fecal SCFA Concentration Response (Δ week 6 - baseline; dependent variables)									
		Propionate			Acetate			Butyrate			
		β -Coef	<i>p</i> value (adj.)	AICc	β -Coef	<i>p</i> value (adj.)	AICc	β -Coef	<i>p</i> value (adj.)	AICc	
Baseline Microbiota	All OTUs	PC1	2.86	0.01(0.039)							
		PC2			133.2	-4.15	0.03(0.056)	146.2	-1.21	0.05(0.07)	113.3
		PC3	2.77	0.03(0.06)							
	All CARGs	PC2	2.75	0.56(0.6)	141.1	-8.38	0.2 (0.24)	150	4.67	0.02(0.048)	111.3
	Sig. OTUs	PC1			134.5	-8.46	0.03(0.056)	150	-2.85	0.02(0.049)	115.6
		PC2	7.23	0.02(0.049)		2.30	0.58(0.64)		-0.80	0.52(0.55)	
	CARGs	CARG5	5.54	0.07(0.09)		10.16	0.01(0.043)				
		CARG6			139.0			144.2	-1.58	0.014(0.043)	110.3
	OTUs	CARG7	1.43	0.03(0.056)							
		OTU85 <i>B. obeum</i>	-21.86	0.03(0.056)							
OTU46 <i>C. leptum</i>		-9.28	0.17(0.19)	139.5			147			110.7	
	OTU41 <i>E. oxidoreducens</i>				-13.48	0.046(0.07)		-5.02	0.016(0.047)		
Shifts of Microbiota (Δ week 1 - baseline)	All OTUs	PC1	-2.66	0.03(0.06)							
		PC2	-2.48	0.07(0.09)	136.3			149.4			116.3
		PC3				3.35	0.14(0.17)		0.88	0.20(0.25)	
	All CARGs	PC1			132.13	-5.28	0.159(0.193)	152.9	-2.14	0.21(0.24)	120.62
		PC2	-9.57	0.007(0.038)		-7.22	0.33(0.375)		-0.038	0.98(0.98)	
	Sig. OTUs	PC1	-6.99	0.011(0.039)							
		PC2			133.2			144.4	2.67	0.08(0.10)	114.2
	CARGs	PC3				12.00	0.01(0.039)				
		CARG1	1.89	0.0045(0.03)				148.6	0.482	0.23(0.25)	116.2
	OTUs	CARG7			131.1	2.02	0.09(0.11)				
OTU6 <i>P. copri</i>		-1.50	0.04(0.07)								
OTU38 <i>P. succinatutens</i>		8.38	0.05(0.07)	138.67			140.2			103.1	
	OTU7 <i>B. uniformis</i>				10.32	0.002(0.018)					
	OTU41 <i>E. oxidoreducens</i>							7.22	0.0006(0.0097)		
Shifts of Microbiota (Δ week 6 - baseline)	All OTUs	PC1	-4.23	<0.0001(0.005)							
		PC2	-1.86	0.046(0.07)	123.7	3.72	0.10(0.12)	148.7			118.0
		PC3							0.16	0.80(0.81)	
	All CARGs	PC2	-10.89	0.001(0.014)	128.95	-12.72	0.018(0.048)	144.95			108.98
		PC3							6.07	0.007(0.038)	
	Sig. OTUs	PC1	6.54	0.0006(0.0097)	125.0	8.05	0.02(0.049)	148.7			112.6
		PC2	6.40	0.005(0.03)		-3.92	0.35(0.38)		-3.14	0.039(0.067)	
	CARGs	CARG1	1.63	0.0016(0.018)		1.64	0.05(0.07)				
		CARG2			128.7	0.11	0.93(0.95)	151.6			109.4
	OTUs	CARG3							2.13	0.009(0.039)	
OTU85 <i>B. obeum</i>		9.76	0.007(0.038)								
OTU11 <i>Subdoligranulum</i> sp.				132.3	8.56	0.027(0.056)	145.8			108.4	
	OTU41 <i>E. oxidoreducens</i>							8.48	0.006(0.035)		

¹ Each model contains the best one or two predictors of PCs, CARGs, or significant OTUs selected by stepwise regression. All models were adjusted by sex/fiber dose. Quality of each model was evaluated by corrected Akaike information criterion (AICc). adj., FDR adjusted *p* values; β -Coef: β -Coefficient; CARGs, co-abundance response groups; PC, principle component; Sig. OTUs: significantly responding operational taxonomic units.