

Effect of probiotic yoghurt on animal-based diet-induced change in gut microbiota: an open, randomised, parallel-group study

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Table S1. Ingredient lists for animal-based diet period.

(A) For breakfast¹							
Category	Class	Food Item	Energy(kcal)	Protein(g)	Fat(g)	Fiber(g)	
	Eggs	A scrambled egg	113	6.5	9.0	0.0	
		A sunny side up egg	113	6.5	9.0	0.0	
		A boiled egg	76	6.5	5.0	0.0	
		A rolled egg	76	5.4	4.5	0.0	
		A poached egg	76	6.5	5.0	0.0	
	Meat substitute	Canned beef 50g	102	9.9	6.5	0.0	
		Frankfurter 60g	179	7.6	14.8	0.0	
		Bacon 60g	71	2.3	6.8	0.0	
		Ham 60g	117	9.9	8.1	0.0	
		Sausage 60g	80	13.3	7.1	0.0	
(B) For lunch and dinner²							
Main menu	Beef	Hamburger 120g	268	15.9	16.0	0.0	
		Beef stew 200g	236	12.0	14.4	0.0	
		Meat sause 1 can	298	11.2	14.7	0.0	
		Sirloin steak 150g	747	17.5	71.3	0.0	
		Fired meat 85g	222	25.0	25.3	0.0	
		Pork	Meat loaf 100g	415	27.4	25.5	0.0
			Ginger pork 220g	332	24.0	24.4	0.0
			Sparerib 200g	212	7.1	17.3	0.0
			Mapo doufu	241	18.0	14.8	0.0
			Pork cutlets 200g	486	21.4	36.3	0.0
	Stir-fried pork liver 220g		282	44.8	7.4	0.0	
	Pork fillet cutlet 200g		240	20.1	12.5	0.0	
	Meat ball 210g		422	22.3	26.9	0.0	
	Pork steak 200g		481	22.8	35.1	0.0	
	Pork chop 200g		487	29.7	34.1	0.0	
	Chicken	Pork kakuni 260g	603	19.5	46.7	0.0	
		Pork saute 200g	298	21.4	22.2	0.0	
		Teriyaki chicken 220g	469	37.9	37.7	0.0	
		Herb roasted chicken 220g	449	37.9	37.7	0.0	
		Chicken steamed with sake 221g	380	25.4	27.1	0.0	
Chicken saute 220g		449	37.9	37.7	0.0		
Yu Lin Chi 200g		965	45.8	68.7	0.0		
White meat cutlet 100g		205	19.8	11.4	0.0		
Tandoori chicken 156.5g		177	20.5	7.1	0.0		
Sub-menu	Beef	Roast beef 60g	118	13.0	7.0	0.0	
		Grilled bone-less short rib 80g	363	10.0	34.1	0.0	
	Pork	Chinese-style barbecued pork 80g	138	15.5	6.6	0.0	
		Shumai 5pieces (15g per 1pieces)	172	7.4	9.0	0.0	
	Chicken	Fried chicken 3 picies	345	17.3	29.1	0.0	
		Yakitori (Grilled chicken) 6 sticks	419	40.4	23.7	0.1	
		Chukune (Japanese chicken meat ball) 1 stick	108	6.0	5.8	0.0	
		Gizzard 1 stick	37.5	7.3	0.7	0.0	
		Fried chicken wing 3 pieces	512	26.5	35.8	0.0	
		Fried chicken with bone 1 bone	262	14.8	16.7	0.0	

¹Subjects consumed a combination of one egg menu and 100g meat substitutes for breakfast

²Subjects consumed one main food item with ~100g sub items. Otherwise, subjects consumed 150~200g sub items.

Table S2. List of permitted foods during animal-based diet period.

Class	Food items
Meat	Beef
	Pork
	Chicken
	Giblets
Meat substitute	Ham
	Wiener sausage
	Bacon
	Raw ham
Egg	Egg
	Quail's egg
Oil for cooking	Olive oil
	Salad oil
	Sesam oil
Fruit juice	Fruit juice
Favorite food	Candy
	Caramel
	Marshmallow
	Jerry Cofee
	Tea
	Herb tea
Seasoning agent	Soy sauce
	Acetic acid
	Mayonnaise
	Dressing
	Spice
	Oil
	Mirin (Seasoning liquor)
	Consomme
Soup stock	

Table S3. List of prohibited foods during animal-based diet period.

Class	Food Items
Staple diet	Pasta, macaroni Rice Bread
Supplement	Noodle (Udon, Soba, Chinese noodle)
Fibre	Health food, Food with Health Claims Vegetable Sea weed Fruit Mushroom Nut Sesami Sweet potato
Fermented food	Natto Miso, Miso soup Salt-marinated rice malt, Shouyu-marinated rice malt
Drink	FOSHU product ¹ Beverage containing of probiotics

¹ Food for Specified Health Uses (FOSHU) product

Table S4. Ingredient lists for balanced diet.¹

Main dishes (boxed lunch delivery)	time	Energy (kcal)	Protein (g)	Fat (g)	Carbohydrate (g)	Fiber (g)
Boiled horse mackerel with chop suey	breakfast	205	15.0	3.9	27.2	3.8
Spicy taste fried horse mackerel	lunch	235	16.4	10.4	18.9	3.1
Fried chicken with sweet and sour sauce	dinner	442	19.7	22.0	39.8	2.6
Chicken cream stew	breakfast	316	12.5	17.5	27.5	5.5
Shrimps with chilli sauce	lunch	266	10.1	12.5	27.9	3.0
Simmered hairtail with ginger sauce	dinner	396	17.3	27.3	17.0	2.6
Marinated salmon	breakfast	289	17.8	14.3	20.9	2.5
Pork cutlet with egg drop soup	lunch	415	15.1	19.2	46.1	4.3
Chicken simmered in wine	dinner	331	19.7	16.5	23.9	3.7
Chop suey	breakfast	303	11.5	18.1	22.5	3.7
Flat fish simmered w. grated white radish	lunch	264	19.7	9.4	24.4	3.4
Tofu hamburger	dinner	242	14.5	9.9	24.9	5.8
Simmered meat and potatoes	breakfast	264	10.0	9.7	33.9	5.3
Five vegetables curry	lunch	330	12.9	17.7	29.7	4.6
Chinese eggplant with garlic sauce	dinner	285	6.6	19.5	20.9	4.0

¹Subjects chose a set of main dishes *ad libitum* for each day during balanced diet period and consumed it with one or two bowl of rice (160~320g) at each meal. After 5 days passed, subjects kept the same rotation with 5 sets of menus.

Table S5. HS-CRP¹, serotonin and MC-FAN². values of subjects during the intervention.

parameter	day	YAB group (n=11)			YB group (n=10)			CTR group (n=10)			<i>P</i> (ANCOVA+Bonferroni) ⁴		
		mean	± SD	<i>P</i> ³	mean	± SD	<i>P</i>	mean	± SD	<i>P</i>	YAB vs YB	YAB vs CTR	YB vs CTR
HS-CRP (mg/dl)	-7	0.07	± 0.14 ⁵	-	0.05	± 0.06	-	0.02	± 0.01	-			
	5	0.03	± 0.04	0.44	0.04	± 0.04	0.32	0.06	± 0.15	0.36	1.00	1.00	1.00
	19	0.02	± 0.03	0.34	0.03	± 0.03	0.27	0.02	± 0.02	0.73	1.00	1.00	0.95
serotonin (ng/ml)	-7	127.64	± 33.07	-	169.60	± 64.42	-	155.51	± 65.74	-			
	5	123.64	± 32.35	0.09	158.14	± 47.12	0.27	147.28	± 55.13	0.36	1.00	1.00	1.00
	19	127.53	± 30.48	0.98	164.00	± 43.92	0.54	149.20	± 57.29	0.38	1.00	1.00	1.00
MC-FAN (sec)	-7	44.76	± 10.65	-	52.40	± 18.83	-	52.78	± 10.85	-			
	5	44.02	± 4.84	0.83	48.36	± 17.60	0.61	54.64	± 16.80	0.77	1.00	0.58	1.00
	19	42.88	± 4.66	0.61	44.63	± 5.13	0.22	44.54	± 4.35	0.12	1.00	1.00	1.00

¹ HS-CRP: High-sensitivity C-reactive protein

² MC-FAN: Micro Channel array Flow Analyzer.

³ Intra-group differences from baseline were compared by a paired Student's t test, **P*<0.05

⁴ Inter-group differences were compared by ANCOVA adjusted for each data at day -7(baseline) followed by a post hoc Bonferroni test

⁵ Mean ± SD (all such values).

YAB, subjects ingested yoghurt during the periods of animal-based diet and balanced diet; YB, subjects ingested yoghurt during the periods of balanced diet; CTR, control

Table S6. Blood parameters for the safety evaluation during the intervention.

parameter	normal range	day	YAB group		YB group		CTR group	
			(n=11)	P [†]	(n=10)	P	(n=10)	P
white blood cell count	3300-9000 / μ l	-7	5018 \pm 1593 ²		5760 \pm 1704		6060 \pm 1092	
		3	5018 \pm 839	1.00	5630 \pm 1548	0.73	5570 \pm 1059	0.10
		5	5964 \pm 2301	0.10	4980 \pm 1434	0.01 *	5720 \pm 950	0.47
		19	4882 \pm 695	0.74	5850 \pm 1338	0.80	5800 \pm 1131	0.41
red blood cell count	M:430-570 $\times 10^4$ / μ l F:380-500 $\times 10^4$ / μ l	-7	436 \pm 34		428 \pm 68		460 \pm 38	
		3	440 \pm 36	0.23	447 \pm 67	0.00 *	458 \pm 36	0.71
		5	447 \pm 38	0.10	433 \pm 66	0.37	456 \pm 45	0.33
		19	449 \pm 35	0.06	439 \pm 58	0.08	460 \pm 39	0.97
hemoglobin	M:13.5-17.5 g/dl F:11.5-15.0 g/dl	-7	13.2 \pm 0.7		13.4 \pm 1.6		14.0 \pm 1.0	
		3	13.3 \pm 0.9	0.36	13.9 \pm 1.8	0.01 *	14.0 \pm 0.9	0.83
		5	13.5 \pm 1.0	0.13	13.4 \pm 1.6	0.90	13.9 \pm 1.2	0.48
		19	13.6 \pm 1.1	0.08	13.7 \pm 1.6	0.25	14.0 \pm 0.9	0.73
hematocrit	M:39.7-52.4 % F:34.8-45.0 %	-7	41.0 \pm 2.4		41.4 \pm 4.5		43.0 \pm 3.0	
		3	41.0 \pm 2.5	0.94	42.9 \pm 4.6	0.00 *	42.4 \pm 2.0	0.23
		5	42.1 \pm 3.3	0.15	42.5 \pm 3.8	0.04 *	43.6 \pm 3.6	0.26
		19	42.6 \pm 3.2	0.03 *	43.2 \pm 3.9	0.01 *	43.4 \pm 2.7	0.31
platelet count	14.0-34.0 $\times 10^4$ / μ l	-7	23.4 \pm 3.5		22.9 \pm 5.4		24.8 \pm 5.6	
		3	24.6 \pm 3.5	0.20	24.9 \pm 6.1	0.02 *	24.2 \pm 5.2	0.22
		5	25.2 \pm 3.3	0.03 *	24.2 \pm 6.4	0.09	24.5 \pm 6.4	0.51
		19	25.6 \pm 2.7	0.02 *	24.1 \pm 6.4	0.02 *	24.9 \pm 6.6	0.92
mean corpuscular volume (MCV)	85-102 fl	-7	94 \pm 4		98 \pm 11		93 \pm 4	
		3	93 \pm 4	0.01 *	97 \pm 9	0.15	93 \pm 4	0.41
		5	94 \pm 4	0.78	100 \pm 11	0.06	96 \pm 4	0.00 *
		19	95 \pm 5	0.14	99 \pm 11	0.03 *	95 \pm 5	0.08
mean cell hemoglobin concentration (MCH)	28.0-34.0 pg	-7	30.4 \pm 1.5		31.7 \pm 3.7		30.5 \pm 1.0	
		3	30.4 \pm 1.4	0.83	31.3 \pm 3.3	0.09	30.7 \pm 1.1	0.33
		5	30.3 \pm 1.5	0.43	31.2 \pm 3.4	0.04 *	30.5 \pm 1.1	0.90
		19	30.4 \pm 1.5	0.79	31.4 \pm 3.5	0.18	30.4 \pm 1.0	0.56
mean cell hemoglobin concentration (MCHC)	30.2-35.1 %	-7	32.3 \pm 0.5		32.3 \pm 0.9		32.6 \pm 0.6	
		3	32.6 \pm 0.5	0.21	32.3 \pm 0.9	0.97	33.1 \pm 0.8	0.04 *
		5	32.2 \pm 0.6	0.56	31.4 \pm 1.1	0.02 *	31.9 \pm 0.7	0.01 *
		19	32.0 \pm 0.7	0.27	31.6 \pm 1.1	0.04 *	32.2 \pm 1.0	0.10
neutrophil rate	40.0-75.0 %	-7	59.1 \pm 8.9		59.5 \pm 10.9		58.3 \pm 8.7	
		3	60.8 \pm 7.2	0.58	57.6 \pm 10.8	0.55	57.6 \pm 7.6	0.80
		5	60.9 \pm 6.4	0.48	54.7 \pm 6.9	0.06	58.5 \pm 6.4	0.93
		19	57.5 \pm 5.4	0.57	59.4 \pm 7.3	0.97	58.6 \pm 8.2	0.91
lymphocyte rate	18.0-49.0 %	-7	32.2 \pm 8.1		31.6 \pm 9.3		34.8 \pm 6.9	
		3	30.7 \pm 5.5	0.61	33.2 \pm 11.4	0.54	34.8 \pm 6.3	1.00
		5	31.2 \pm 6.7	0.60	35.0 \pm 6.6	0.10	34.3 \pm 5.9	0.79
		19	34.0 \pm 4.2	0.45	30.5 \pm 6.7	0.57	34.5 \pm 6.3	0.87
monocyte rate	2.0-10.0 %	-7	5.9 \pm 1.0		5.7 \pm 0.8		4.7 \pm 1.4	
		3	6.1 \pm 1.5	0.65	6.3 \pm 0.8	0.10	5.3 \pm 1.8	0.18
		5	5.9 \pm 1.4	1.00	6.3 \pm 0.9	0.07	5.2 \pm 1.0	0.17
		19	5.8 \pm 1.2	0.91	6.3 \pm 1.2	0.09	5.1 \pm 2.1	0.53
eosinophil rate	0.0-8.0 %	-7	2.3 \pm 2.0		2.7 \pm 3.1		1.4 \pm 1.0	
		3	1.9 \pm 2.1	0.12	2.3 \pm 1.9	0.39	1.6 \pm 1.0	0.45
		5	1.6 \pm 1.1	0.17	3.2 \pm 3.2	0.21	1.4 \pm 0.7	0.93
		19	2.0 \pm 1.4	0.31	3.2 \pm 2.9	0.10	1.3 \pm 0.7	0.34
basophil rate	0.0-2.0 %	-7	0.6 \pm 0.3		0.6 \pm 0.5		0.7 \pm 0.2	
		3	0.6 \pm 0.4	0.89	0.6 \pm 0.2	0.60	0.6 \pm 0.3	0.32
		5	0.5 \pm 0.3	0.43	0.8 \pm 0.4	0.13	0.6 \pm 0.3	0.29
		19	0.6 \pm 0.1	0.17	0.6 \pm 0.5	0.97	0.6 \pm 0.2	0.22
neutrophil number	-	-7	3047.8 \pm 1371.1		3542.9 \pm 1446.0		3592.0 \pm 1082.8	
		3	3068.6 \pm 759.2	0.96	3326.2 \pm 1302.1	0.42	3272.8 \pm 1037.0	0.25
		5	3718.2 \pm 1793.7	0.20	2769.5 \pm 1053.7	0.01 *	3366.3 \pm 764.9	0.57
		19	2795.4 \pm 375.2	0.54	3516.1 \pm 1067.5	0.93	3439.9 \pm 917.5	0.63
lymphocyte number	-	-7	1534.1 \pm 326.2		1712.9 \pm 450.3		2068.8 \pm 362.9	
		3	1529.7 \pm 317.8	0.95	1781.4 \pm 469.7	0.77	1889.7 \pm 205.2	0.19
		5	1790.9 \pm 548.9	0.01 *	1681.7 \pm 329.7	0.77	1940.0 \pm 336.7	0.32
		19	1670.3 \pm 377.1	0.08	1734.4 \pm 373.5	0.84	1973.8 \pm 438.0	0.39
monocyte number	-	-7	297.9 \pm 125.3		320.1 \pm 81.4		279.8 \pm 74.1	
		3	299.9 \pm 77.6	0.95	350.3 \pm 87.1	0.24	292.2 \pm 102.5	0.60
		5	340.7 \pm 111.6	0.25	315.1 \pm 101.6	0.80	294.9 \pm 76.0	0.47
		19	285.3 \pm 79.5	0.64	362.9 \pm 85.7	0.17	280.4 \pm 79.2	0.98
eosinophil number	-	-7	110.8 \pm 104.1		158.0 \pm 170.7		77.7 \pm 46.6	
		3	92.9 \pm 105.2	0.25	137.5 \pm 127.0	0.45	82.5 \pm 53.5	0.66
		5	86.7 \pm 61.8	0.27	173.3 \pm 190.4	0.43	79.9 \pm 41.6	0.88
		19	99.6 \pm 77.1	0.32	203.8 \pm 218.1	0.07	70.6 \pm 36.5	0.34
basophil number	-	-7	27.6 \pm 11.4		26.1 \pm 15.5		41.7 \pm 11.7	
		3	27.1 \pm 16.5	0.90	34.6 \pm 14.1	0.09	32.9 \pm 15.5	0.06
		5	27.3 \pm 16.0	0.94	40.3 \pm 20.9	0.06	31.3 \pm 18.9	0.12
		19	31.2 \pm 8.9	0.03 *	32.7 \pm 25.8	0.47	35.3 \pm 11.4	0.12
AST (GOT)	10-40 IU//37°C	-7	17 \pm 2		19 \pm 5		20 \pm 7	
		3	17 \pm 3	0.89	21 \pm 4	0.10	20 \pm 6	0.60
		5	17 \pm 2	0.48	21 \pm 8	0.32	17 \pm 2	0.15
		19	16 \pm 3	0.07	22 \pm 13	0.43	17 \pm 3	0.09
ALT (GPT)	5-45 IU//37°C	-7	15 \pm 6		16 \pm 7		17 \pm 8	
		3	15 \pm 6	1.00	17 \pm 6	0.41	18 \pm 10	0.63
		5	14 \pm 5	0.40	17 \pm 5	0.78	14 \pm 6	0.05 *
		19	14 \pm 5	0.44	15 \pm 6	0.53	15 \pm 6	0.06
γ-GTP	M:80以下 IU//37°C F:30以下 IU//37°C	-7	16 \pm 4		36 \pm 29		20 \pm 8	
		3	16 \pm 5	0.88	38 \pm 30	0.24	21 \pm 8	0.61
		5	17 \pm 5	0.01 *	36 \pm 29	1.00	20 \pm 6	0.94
		19	16 \pm 6	0.67	34 \pm 31	0.45	19 \pm 7	0.25
ALP	100-325 IU//37°C	-7	175 \pm 66		173 \pm 55		191 \pm 70	
		3	179 \pm 76	0.39	173 \pm 45	0.99	193 \pm 64	0.84
		5	177 \pm 65	0.43	166 \pm 39	0.33	174 \pm 55	0.03 *
		19	194 \pm 85	0.09	174 \pm 43	0.91	193 \pm 68	0.79
LD (LDH)	120-240 IU//37°C	-7	167 \pm 23		179 \pm 38		176 \pm 29	
		3	169 \pm 22	0.72	184 \pm 34	0.12	167 \pm 21	0.04 *
		5	179 \pm 35	0.04 *	178 \pm 38	0.93	172 \pm 16	0.40

		19	169	±	29	0.78	175	±	47	0.53	166	±	20	0.08
LAP	37-61 IU//37°C	-7	48	±	6		54	±	9		51	±	7	
		3	48	±	6	1.00	56	±	8	0.08	51	±	7	0.94
		5	49	±	6	0.07	53	±	9	0.16	50	±	7	0.30
		19	50	±	6	0.05	55	±	10	0.62	51	±	7	0.69
total bilirubin	0.2-1.2 mg/dl	-7	0.8	±	0.4		0.8	±	0.4		0.9	±	0.5	
		3	0.8	±	0.3	0.86	1.1	±	0.5	0.04 *	1.0	±	0.4	0.39
		5	0.9	±	0.3	0.39	0.9	±	0.3	0.58	1.0	±	0.5	0.27
		19	0.8	±	0.3	0.60	1.0	±	0.3	0.15	0.8	±	0.4	0.17
direct bilirubin	0.0-0.2 mg/dl	-7	0.1	±	0.1		0.1	±	0.1		0.1	±	0.0	
		3	0.1	±	0.1	1.00	0.1	±	0.1	0.34	0.1	±	0.0	0.34
		5	0.1	±	0.1	0.34	0.1	±	0.1	0.34	0.2	±	0.1	0.10
		19	0.1	±	0.0	0.34	0.1	±	0.1	0.34	0.1	±	0.1	0.59
indirect bilirubin	0.2-1.0 mg/dl	-7	0.7	±	0.3		0.7	±	0.3		0.8	±	0.4	
		3	0.7	±	0.3	0.82	1.0	±	0.4	0.05 *	0.9	±	0.3	0.50
		5	0.8	±	0.3	0.58	0.8	±	0.2	0.42	0.9	±	0.4	0.45
		19	0.6	±	0.2	0.45	0.8	±	0.3	0.21	0.7	±	0.3	0.16
cholinesterase	200-452 IU//37°C	-7	316	±	74		301	±	66		332	±	59	
		3	318	±	78	0.44	318	±	63	0.01 *	323	±	69	0.16
		5	327	±	85	0.11	303	±	67	0.79	318	±	68	0.08
		19	318	±	77	0.66	306	±	60	0.63	317	±	59	0.04 *
ZTT	2.0-12.0 U	-7	7.2	±	2.7		6.6	±	3.6		7.8	±	2.9	
		3	7.4	±	2.9	0.26	7.1	±	4.0	0.13	7.9	±	2.7	0.81
		5	7.5	±	2.7	0.02 *	7.0	±	3.6	0.03 *	7.6	±	2.6	0.40
		19	7.5	±	2.7	0.22	6.6	±	3.4	0.83	7.7	±	2.6	0.78
total protein	6.7-8.3 g/dl	-7	7.1	±	0.4		7.1	±	0.4		7.5	±	0.4	
		3	7.3	±	0.4	0.02 *	7.5	±	0.4	0.00 *	7.4	±	0.5	0.33
		5	7.5	±	0.5	0.00 *	7.3	±	0.4	0.06	7.4	±	0.3	0.73
		19	7.5	±	0.5	0.00 *	7.4	±	0.4	0.04 *	7.5	±	0.4	0.67
urea nitrogen	8.0-20.0 mg/dl	-7	12.9	±	3.6		12.3	±	2.5		14.1	±	3.7	
		3	16.9	±	4.1	0.00 *	16.1	±	3.3	0.01 *	16.5	±	2.6	0.01 *
		5	17.0	±	4.9	0.00 *	14.2	±	3.0	0.13	15.0	±	3.6	0.30
		19	11.9	±	2.8	0.18	12.5	±	1.5	0.82	11.3	±	3.2	0.00 *
creatinine	0.47-0.79 mg/dl	-7	0.69	±	0.13		0.69	±	0.14		0.69	±	0.13	
		3	0.68	±	0.13	0.56	0.68	±	0.12	0.70	0.68	±	0.13	0.32
		5	0.68	±	0.14	0.61	0.67	±	0.12	0.19	0.67	±	0.16	0.25
		19	0.72	±	0.16	0.05 *	0.69	±	0.12	0.52	0.67	±	0.14	0.13
uric acid	M:3.8-7.0 mg/dl F:2.5-7.0 mg/dl	-7	4.5	±	1.2		5.1	±	1.2		4.8	±	1.5	
		3	5.0	±	1.6	0.02 *	5.8	±	1.4	0.00 *	5.6	±	1.5	0.02 *
		5	5.1	±	1.9	0.07	5.5	±	1.4	0.04 *	4.9	±	1.5	0.77
		19	4.6	±	1.5	0.32	5.2	±	1.0	0.78	4.9	±	1.4	0.61
creatinine kinase	40-150 IU//37°C	-7	102	±	56		102	±	36		194	±	325	
		3	96	±	47	0.55	102	±	42	0.98	132	±	136	0.36
		5	123	±	78	0.06	127	±	72	0.27	111	±	51	0.39
		19	91	±	34	0.45	102	±	66	1.00	99	±	67	0.32
K	3.5-5.0 mEq/l	-7	3.8	±	0.3		3.7	±	0.2		3.9	±	0.3	
		3	3.8	±	0.2	1.00	3.8	±	0.1	0.66	3.7	±	0.3	0.01 *
		5	3.7	±	0.2	0.60	4.0	±	0.3	0.03 *	3.9	±	0.3	0.78
		19	3.7	±	0.1	0.26	3.9	±	0.3	0.01 *	3.8	±	0.4	0.66
Cl-	98-108 mEq/l	-7	102	±	2		101	±	2		100	±	2	
		3	103	±	1	0.46	101	±	3	0.40	103	±	2	0.00 *
		5	101	±	1	0.14	101	±	2	0.50	101	±	2	0.02 *
		19	101	±	1	0.11	101	±	3	0.33	102	±	2	0.00 *
Na	137-147 mEq/l	-7	142	±	1		141	±	1		140	±	2	
		3	141	±	2	0.11	141	±	2	0.77	141	±	1	0.24
		5	140	±	2	0.01 *	139	±	2	0.06	140	±	2	0.43
		19	141	±	2	0.19	141	±	1	0.64	141	±	2	0.15
Ca	8.4-10.4 mg/dl	-7	9.5	±	0.3		9.7	±	0.2		9.7	±	0.3	
		3	9.6	±	0.3	0.67	9.8	±	0.3	0.07	9.6	±	0.3	0.26
		5	9.7	±	0.3	0.11	9.8	±	0.3	0.11	9.7	±	0.2	0.81
		19	9.7	±	0.3	0.06	9.8	±	0.4	0.06	9.8	±	0.2	0.30
inorganic phosphorus	2.5-4.5 mg/dl	-7	3.9	±	0.8		4.3	±	1.0		3.9	±	0.6	
		3	4.0	±	0.4	0.29	4.2	±	0.5	0.67	3.8	±	0.4	0.39
		5	4.0	±	0.7	0.66	4.7	±	0.9	0.26	4.2	±	1.1	0.22
		19	4.2	±	0.7	0.22	4.7	±	0.7	0.28	4.1	±	0.6	0.24
serum iron	M:50-200 µg/dl F:40-180µg/dl	-7	101	±	25		107	±	52		102	±	25	
		3	97	±	36	0.65	124	±	44	0.23	96	±	26	0.66
		5	100	±	30	0.92	108	±	38	0.98	103	±	28	0.89
		19	92	±	34	0.48	129	±	50	0.17	95	±	33	0.42
serum amylase	40-122 IU//37°C	-7	69	±	15		64	±	13		71	±	18	
		3	68	±	15	0.75	60	±	10	0.21	68	±	17	0.34
		5	68	±	18	0.86	62	±	14	0.49	68	±	17	0.42
		19	75	±	16	0.19	70	±	13	0.09	85	±	43	0.22
total cholesterol	120-219 mg/dl	-7	202	±	39		195	±	36		205	±	45	
		3	207	±	38	0.18	212	±	31	0.00 *	205	±	43	0.93
		5	223	±	47	0.01 *	201	±	21	0.47	207	±	43	0.84
		19	207	±	28	0.28	203	±	41	0.16	195	±	36	0.26
HDL-cholesterol	40-95 mg/dl	-7	66	±	13		67	±	14		80	±	22	
		3	68	±	12	0.25	77	±	17	0.03 *	79	±	17	0.65
		5	71	±	12	0.03 *	71	±	14	0.20	78	±	17	0.43
		19	68	±	16	0.51	69	±	13	0.49	82	±	21	0.47
LDL-cholesterol	65-139 mg/dl	-7	122	±	32		105	±	28		110	±	32	
		3	132	±	34	0.02 *	127	±	31	0.00 *	116	±	34	0.48
		5	142	±	41	0.01 *	120	±	19	0.02 *	119	±	37	0.39
		19	126	±	24	0.27	113	±	33	0.16	102	±	25	0.33
triglyceride	30-149 mg/dl	-7	69	±	35		118	±	120		80	±	61	
		3	57	±	23	0.28	54	±	24	0.08	72	±	51	0.72
		5	61	±	28	0.39	51	±	23	0.10	51	±	18	0.13
		19	78	±	42	0.37	115	±	79	0.90	80	±	36	0.97
free fatty acid	0.10-0.90 mEq/l	-7	0.70	±	0.23		0.71	±	0.25		0.82	±	0.26	
		3	0.66	±	0.23	0.73	0.92	±	0.24	0.08	0.92	±	0.36	0.45
		5	0.95	±	0.33	0.00 *	0.88	±	0.30	0.28	0.97	±	0.31	0.07
		19	0.70	±	0.26	0.98	0.78	±	0.33	0.55	0.66	±	0.28	0.14
		-7	80	±	6		80	±	7		79	±	8	

Glucose	70-109 mg/dl	3	81	±	6	0.88	76	±	11	0.20	78	±	8	0.67
		5	81	±	6	0.83	82	±	9	0.60	80	±	5	0.39
		19	86	±	10	0.03 *	83	±	6	0.18	86	±	13	0.05
		-7	5.3	±	0.4		5.3	±	0.2		5.2	±	0.2	
hemoglobin A1c	4.6 - 6.2 %	3	5.4	±	0.4	0.01 *	5.4	±	0.2	0.00 *	5.3	±	0.2	0.01 *
		5	5.3	±	0.4	0.10	5.3	±	0.2	0.28	5.2	±	0.2	0.59
		19	5.3	±	0.4	0.55	5.3	±	0.3	0.32	5.2	±	0.2	1.00
		-7	14.1	±	1.0		14.0	±	0.6		13.7	±	1.1	
glycoalbumin	12.3 - 16.5 %	3	13.8	±	1.0	0.01 *	13.7	±	0.8	0.01 *	13.5	±	1.1	0.01 *
		5	13.6	±	1.0	0.00 *	13.6	±	0.7	0.00 *	13.4	±	1.1	0.02 *
		19	13.7	±	0.9	0.00 *	13.6	±	0.6	0.00 *	13.4	±	1.1	0.00 *
		-7	32	±	10		30	±	5		33	±	6	
pancreatic amylase	19-53 U/l	3	33	±	12	0.33	30	±	4	0.57	32	±	7	0.46
		5	35	±	13	0.12	31	±	5	0.46	32	±	7	0.33
		19	NT ³				NT				NT			
		-7	9	±	6		9	±	5		8	±	3	
lipase	5-35 U/l	3	10	±	7	0.32	10	±	9	0.41	8	±	3	0.47
		5	11	±	9	0.28	10	±	5	0.43	8	±	3	0.79
		19	NT				NT				NT			
		-7	32.9	±	33.1		34.1	±	18.0		19.8	±	13.5	
NT-proBNP	125 pg/ml 以下	3	17.9	±	14.8	0.04 *	22.7	±	16.6	0.08	25.9	±	12.3	0.35
		5	23.2	±	11.6	0.28	25.8	±	12.7	0.01 *	27.2	±	21.9	0.11
		19	NT				NT				NT			
		-7												

¹ Intra-group differences from baseline were compared by a paired Student's t test, *P<0.05

² Mean ± SD (all such values).

³ No test.

YAB, subjects ingested yoghurt during the periods of animal-based diet and balanced diet; YB, subjects ingested yoghurt during the periods of balanced diet; CTR, control

Table S7. Comparative table with David's report (2014) on energy intake and macronutrient composition.²

	Baseline		Animal-based diet		Balanced diet	Plant-based diet
	this study	David's report	this study	David's report	this study	David's report
Calorie (kcal)	1,514 ± 188 ¹	2623 ± 205	1,503 ± 144	1,777 ± 221	1468 ± 191	1,695 ± 172
Protein intake (% kcal)	15.5 ± 1.3	16.2 ± 1.3	23.2 ± 1.4	30.1 ± 0.5	17.2 ± 0.9	10.0 ± 0.3
Fat intake (% kcal)	32.1 ± 3.7	32.5 ± 2.2	63.5 ± 2.7	69.5 ± 0.4	35.6 ± 3.7	22.1 ± 1.7
Fibre intake (g per 1000 kcal)	6.5 ± 1.1	9.3 ± 2.1	0.6 ± 0.1	negligible	9.2 ± 1.1	25.6 ± 1.1

¹ Median and median absolute deviation (MAD) (all such values).

² David, L.A., Maurice, C.F., Carmody, R.N., Gootenberg, D.B., Button, J.E., Wolfe, B.E., Ling, A.V., Devlin, A.S., Varma, Y., Fischbach, M.A., Biddinger, S.B., Dutton, R.J. and Turnbaugh, P.J., 2014. Diet rapidly and reproducibly alters the human gut microbiome. *Nature* 505: 559-563.

Table S8. Change of body mass index during the intervention.

	YAB group (n=10)		<i>P</i> ¹	YB group (n=10)		<i>P</i>	CTR group (n=11)		<i>P</i>	<i>P</i> (ANCOVA+Bonferroni) ²		
	Mean	SD		Mean	SD		Mean	SD		YAB vs YB	YAB vs CTR	YB vs CTR
day -7	21.78	± 3.39 ²	-	21.67	± 3.58	-	23.25	± 3.66	-			
day 3	21.57	± 3.35	0.026	21.34	± 3.52	0.003	23.07	± 3.75	0.044	0.541	1.000	
day 5	21.54	± 3.25	0.016	21.41	± 3.51	0.058	22.92	± 3.72	0.004	1.000	1.000	
day 19	21.73	± 3.30	0.642	21.59	± 3.71	0.560	23.15	± 3.79	0.460	1.000	1.000	1.000

¹ Intra-group differences from baseline were compared by a paired Student's t test.

² Inter-group differences were compared by ANCOVA adjusted for each data at day -7(baseline) followed by a post hoc Bonferroni test

³ Mean ± SD (all such values).

YAB, subjects ingested yoghurt during the periods of animal-based diet and balanced diet; YB, subjects ingested yoghurt during the periods of balanced diet; CTR, control

Table S9. Conditions of defecation monitored by questionnaires with Likert type scale.¹

	day	YAB group			YB group			CTR group			<i>P</i> (ANCOVA+Bonferroni) ³		
		(n=11)	<i>P</i> ²		(n=10)	<i>P</i>		(n=10)	<i>P</i>		YAB vs YB	YAB vs CTR	YB vs CTR
flatus odour	-7	3.0 ± 0.9 ⁴		2.5 ± 0.8		2.7 ± 0.9							
	5	3.0 ± 0.6	1.00	2.3 ± 0.8	0.59	2.8 ± 1.0	0.68	0.54	1.00				
	12	3.3 ± 0.6	0.08	2.9 ± 1.1	0.10	3.0 ± 0.9	0.08	1.00	1.00			1.00	
	19	3.2 ± 0.8	0.44	2.9 ± 0.7	0.17	2.9 ± 1.0	0.34	1.00	1.00			1.00	
hard stool	-7	3.2 ± 0.8		2.9 ± 1.0		3.1 ± 0.9							
	5	3.5 ± 0.8	0.28	3.2 ± 1.0	0.43	3.1 ± 0.9	1.00	1.00	1.00				
	12	3.2 ± 1.1	1.00	3.1 ± 0.9	0.62	2.8 ± 1.2	0.58	1.00	1.00			1.00	
	19	3.3 ± 0.8	0.59	3.1 ± 1.0	0.64	3.5 ± 0.5	0.17	1.00	1.00			0.99	
loose bowel	-7	3.3 ± 0.8		2.4 ± 1.0		2.6 ± 1.2							
	5	2.7 ± 0.9	0.05	2.3 ± 1.1	0.81	3.0 ± 0.8	0.34	1.00	0.82				
	12	3.3 ± 0.9	1.00	2.7 ± 1.1	0.50	3.2 ± 0.9	0.17	1.00	1.00			0.91	
	19	3.1 ± 0.7	0.44	2.5 ± 1.0	0.80	3.0 ± 1.1	0.27	1.00	1.00			0.83	

¹ Likert type scale were recorded as follows. 1, very much; 2, quite a lot; 3, a little; 4, not at all.

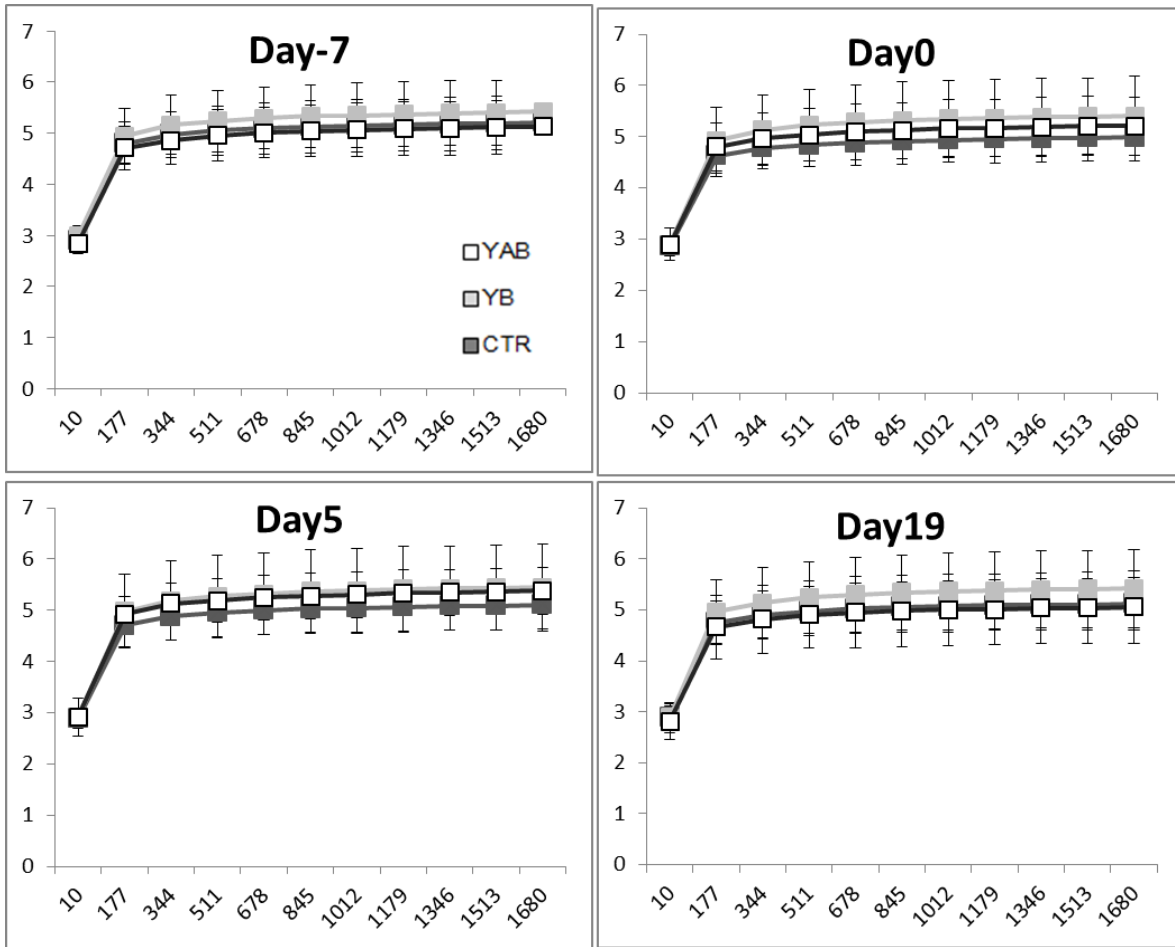
² Intra-group differences from baseline were compared by a paired Student's t test, * *P*<0.05.

³ Inter-group differences were compared by ANCOVA adjusted for each data at day -7(baseline) followed by a post hoc Bonferroni test.

⁴ Mean ± SD (all such values).

YAB, subjects ingested yoghurt during the periods of animal-based diet and balanced diet; YB, subjects ingested yoghurt during the periods of balanced diet; CTR, control

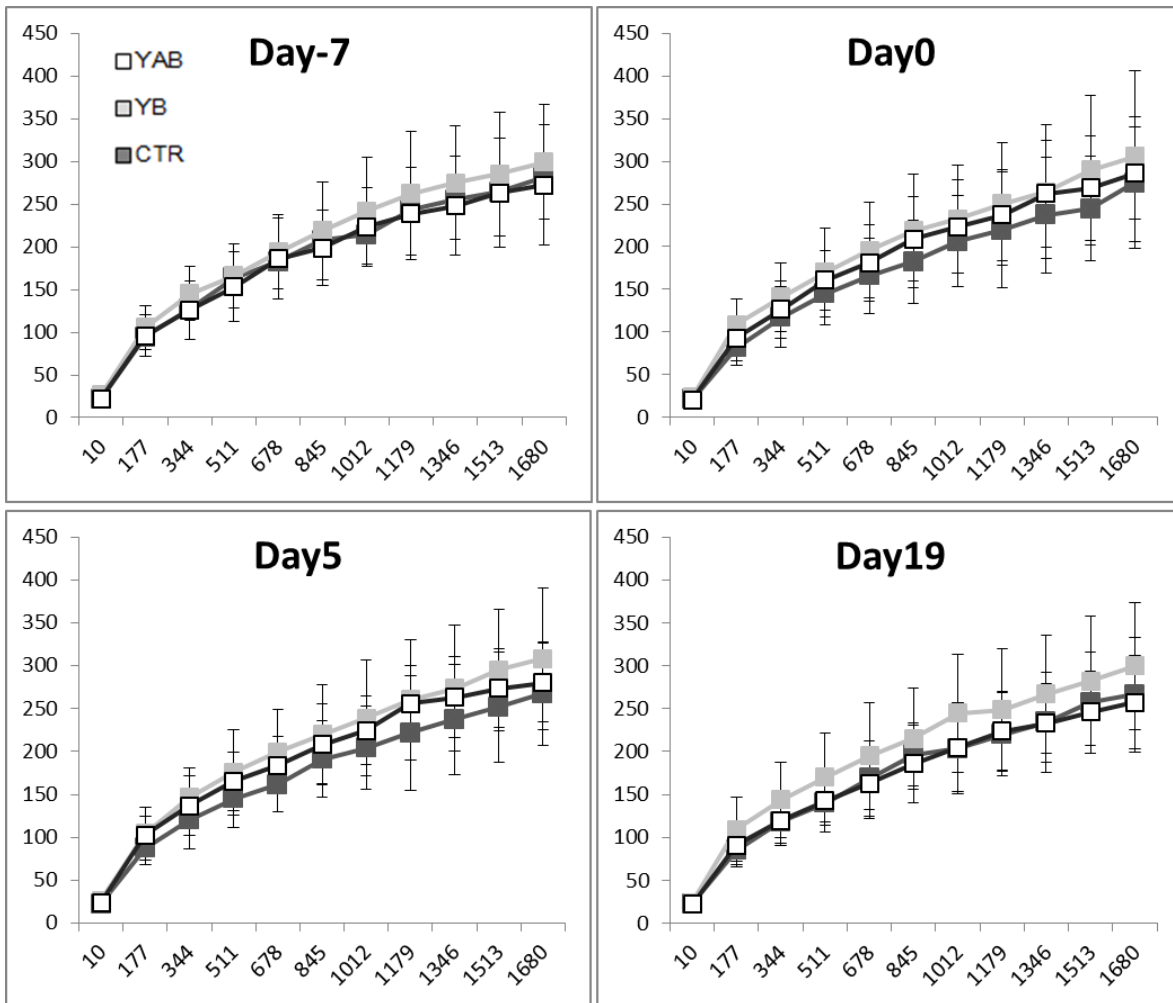
Figure S1. Rarefaction analysis of Shannon diversity index.



None of the values significantly differed within the same group (paired Student's t-test) or between groups (ANCOVA, Bonferroni test) at the end of rarefaction curve.

White: YAB, subjects who ingested yoghurt during both the animal-based and balanced diet periods.
Grey: YB, subjects who ingested yoghurt during the balanced diet period.
Black: CTR, control.

Figure S2. Rarefaction analysis of Chao1 index.



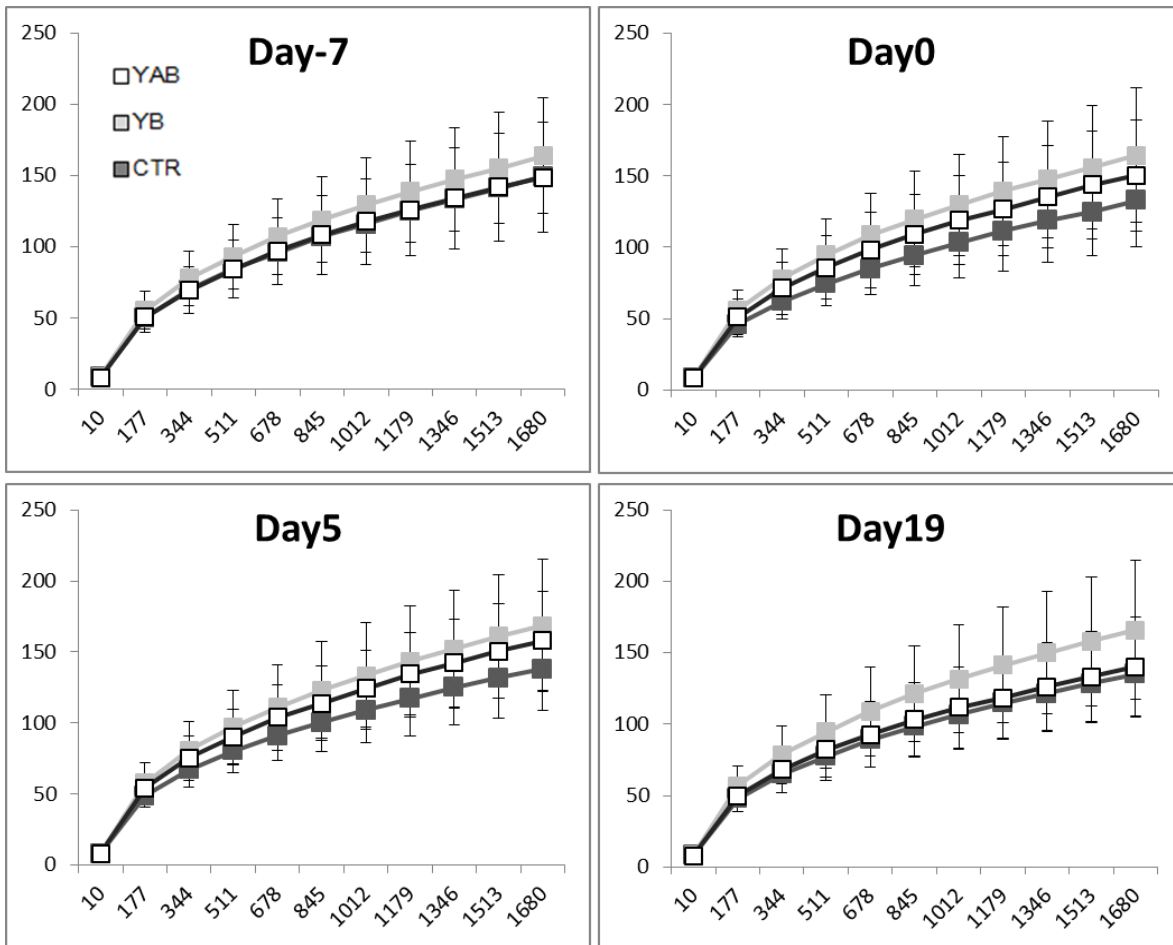
None of the values significantly differed within the same group (paired Student's t-test) or between groups (ANCOVA, Bonferroni test) at the end of rarefaction curve.

White: YAB, subjects who ingested yoghurt during both the animal-based and balanced diet periods.

Grey: YB, subjects who ingested yoghurt during the balanced diet period.

Black: CTR, control.

Figure S3. Rarefaction analysis of number of operational taxonomic units (OTUs).



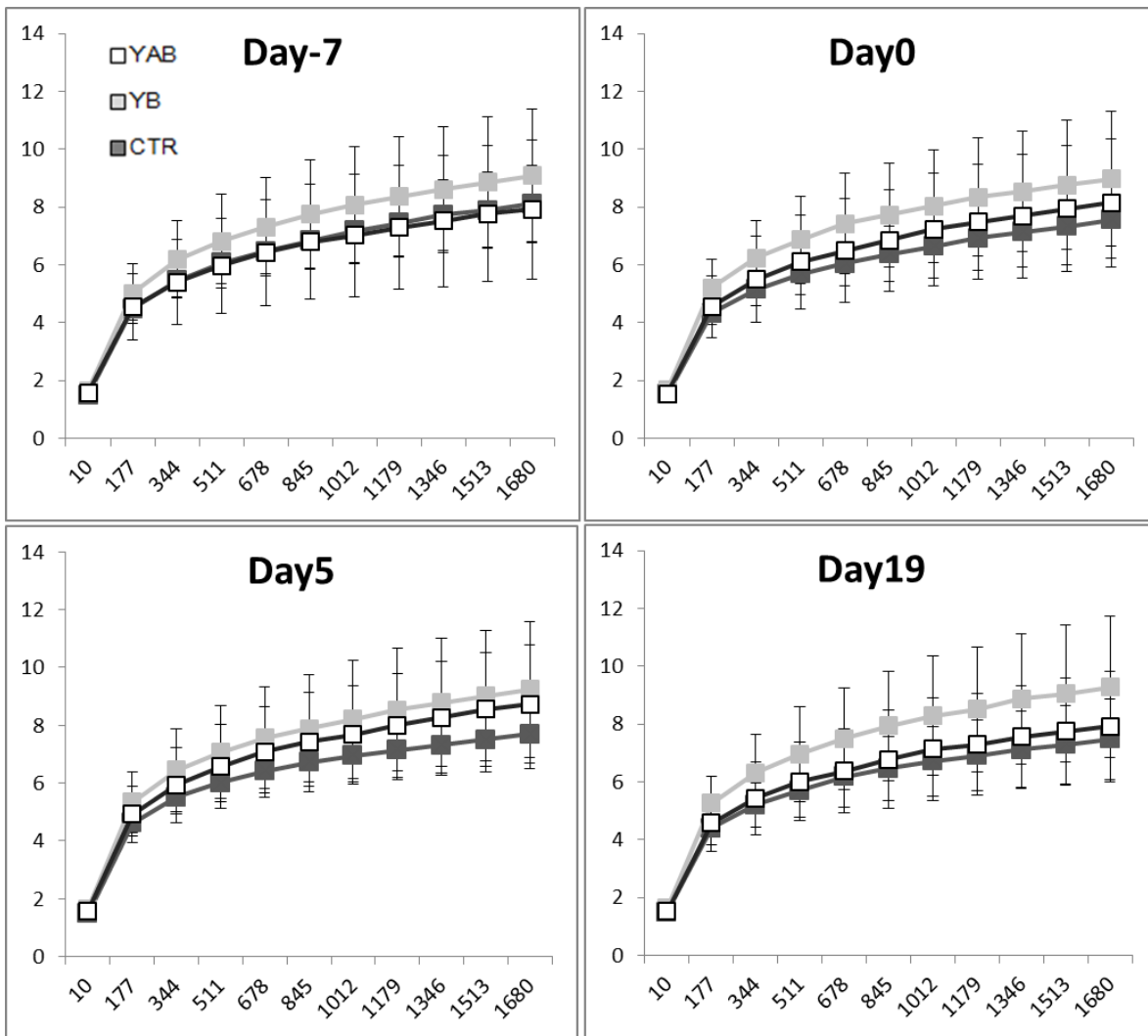
None of the values significantly differed within the same group (paired Student's t-test) or between groups (ANCOVA, Bonferroni test) at the end of rarefaction curve.

White: YAB, subjects who ingested yoghurt during both the animal-based and balanced diet periods.

Grey: YB, subjects who ingested yoghurt during the balanced diet period.

Black: CTR, control.

Figure S4. Rarefaction analysis of phylogenetic distance (PD) whole tree.



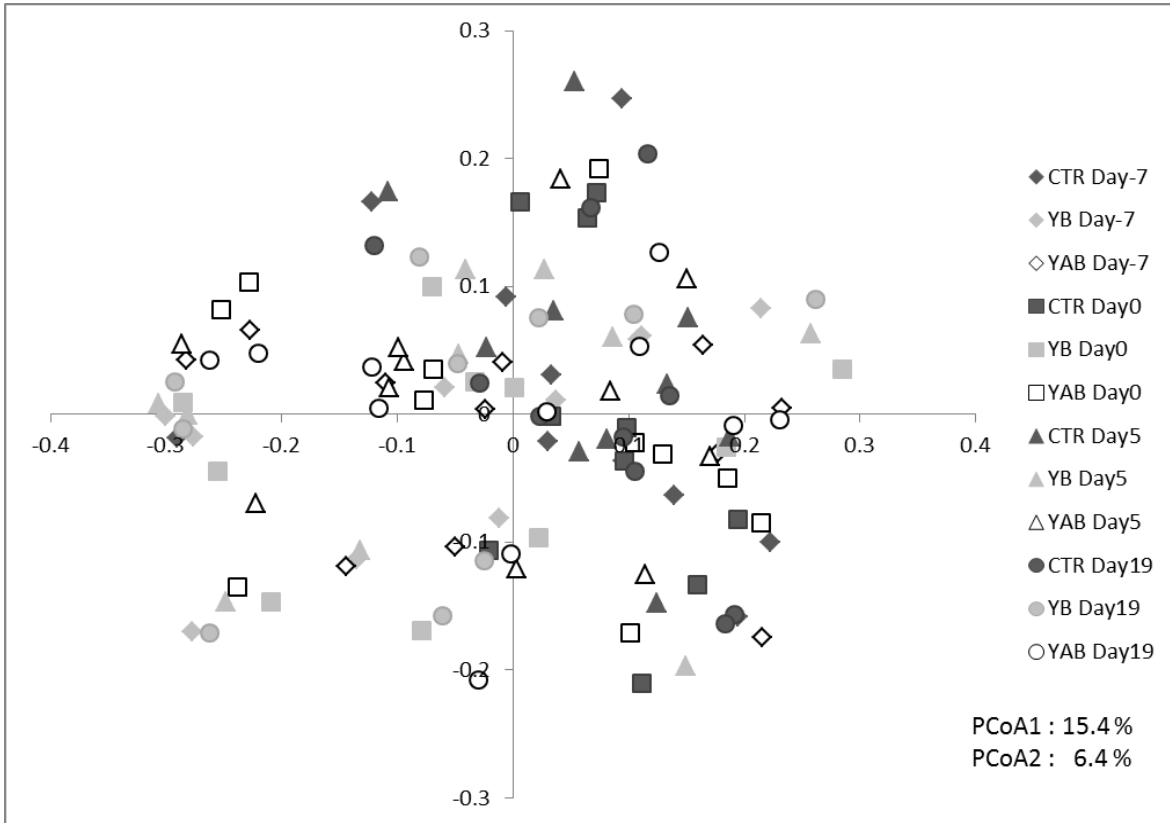
None of the values significantly differed within the same group (paired Student's t-test) or between groups (ANCOVA, Bonferroni test) at the end of rarefaction curve.

White: YAB, subjects who ingested yoghurt during both the animal-based and balanced diet periods.

Grey: YB, subjects who ingested yoghurt during the balanced diet period.

Black: CTR, control.

Figure S5. Unweighted UniFrac principal co-ordinate analysis (PCoA) of gut microbiota for each group at each time point.

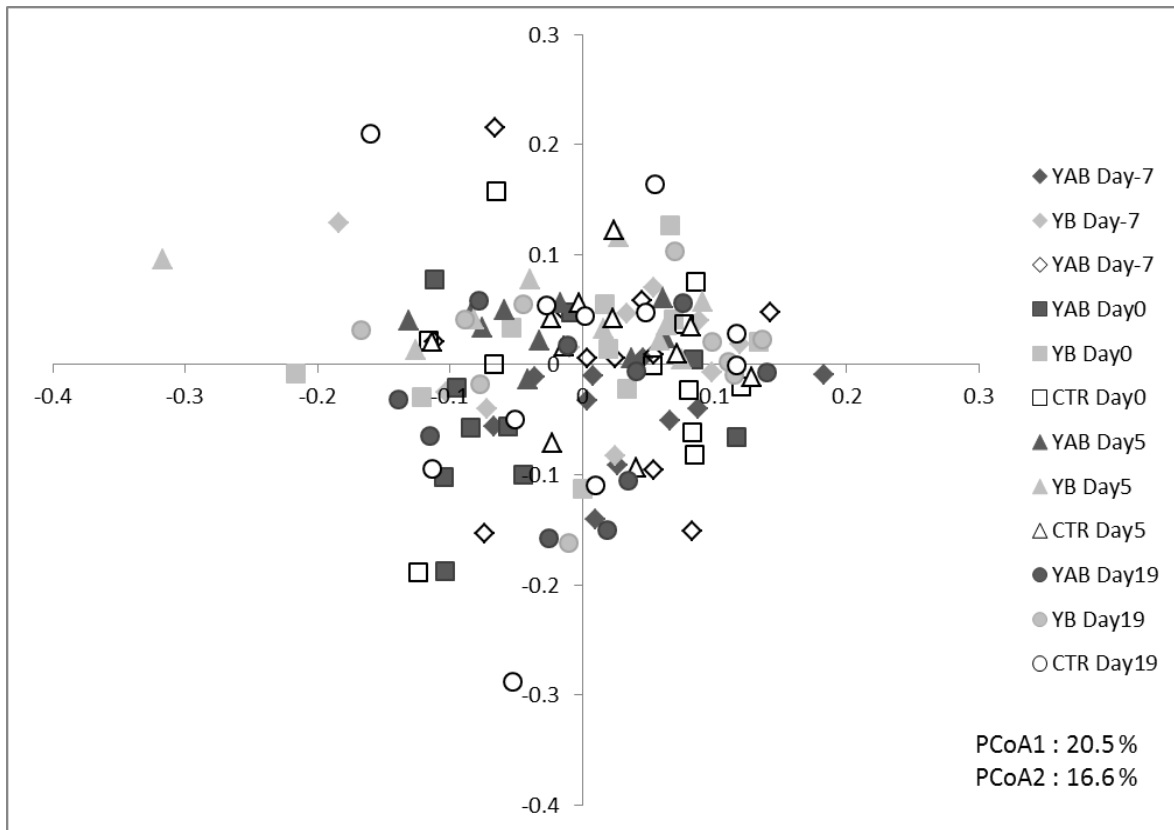


White: YAB, subjects who ingested yoghurt during both the animal-based and balanced diet periods.

Grey: YB, subjects who ingested yoghurt during the balanced diet period.

Black: CTR, control.

Figure S6. Weighted UniFrac principal co-ordinate analysis (PCoA) of gut microbiota for each group at each time point.



White: YAB, subjects who ingested yoghurt during both the animal-based and balanced diet periods.

Grey: YB, subjects who ingested yoghurt during the balanced diet period.

Black: CTR, control.