

Table S1 Primers and amplification conditions applied in RT-qPCR.

Target	Forward sequence	Reverse sequence	Ta (°C) ¹
TNF- α	ttcctgcaccctctgtctttc	cagttctatggcccagacc	53
TLR-2	gacgctcatgtgagtgagtga	agagatcacggaccaaggga	53
TLR-4	gctagcctgccttgtttctc	ggctttttgttgccaaggct	53
IL-8	cacctcaagaacatccagagct	caagcagaactgaactaccatcg	60
Fiaf	caccacttacacaggccg	gaagtccacagagccgttca	66
GPR41	tgtccaatactctgcatctgtga	agcaggtccgaaatggtcag	66
mGAPDH	ccctgttgctgtagccgtat	tgggatgggaaacctgact	53

¹ Ta – annealing temperature.

TNF- α – tumour necrosis factor α ; TLR-2 – toll-like receptor 2; TLR-4 – toll-like receptor 4; IL-8 – interleukin 8; Fiaf – fasting-induced adipose factor; GPR41 – G protein coupled receptor 41; mGAPDH – murine glyceraldehyde 3-phosphate dehydrogenase.

Table S2. Primers and amplification conditions applied for characteristics of caecal microbiota.

Primer	Sequence (5' → 3')	MgCl ₂ (mM)	T _a (°C) ¹	Target	Reference
qPCR					
BIF-F	tcgctg(c/t)ggtgtgaaag	3.0	58	<i>Bifidobacterium</i>	S1
BIF-R	ccacatccagc(a/g)tccac				
ATO-F	accgctttcagcagggga	3.0	61	<i>Atopobium</i>	S1
ATO-R	acgcccaatgaatccggat				
Sg-Clept-F	gcacaagcagtgaggat	3.0	58	<i>C. leptum</i> group	S2
Sg-Clept-R3	cttctccgttttgtcaa				
BPP-F	ggtgtcggcttaagtccat	3.0	68	<i>Bacteroides– Prevotella– Porphyromonas</i> group	S1
BPP-R	cgga(c/t)gtaagggccgtgc				
ECC-F	cccttattgtagttgccatcatt	3.0	61	<i>Enterococcus</i>	S1
ECC-R	actcgttgtagttcccattgt				
RrecRi630mF	cctccgacactctagtmcgac	3.0	58	<i>Eubacterium rectale</i> group	S3
Erec870R	cgkactagagtgctggagg				
Lac1F	agcagtagggaatcttcca	3.0	58	<i>Lactobacillus</i>	S4, S5
Lab667R	caccgctacacatggag				
CI-F1	tacchraggaggaagccac	3.0	58	Clostridium cluster I	S6
CI-R2	gttcttctaatactctacgcat				
UNI-F	gtgstgcayggyygtcgtca	3.0	60	All eubacteria	S7
UNI-R	acgtrtccmnccttctc				
PCR-DGGE					
1401-r	cggtgtgtacaagacc	5.0	57	Eubacteria	S8
968-GC-f	GC-aacgcgaagaacctta				
g-ccoc-F	aaatgacggtacctgactaa	5.0	58	<i>Clostridium cocoides</i> group	S9
g-ccoc-R-GC	GC- ctttgagtttattcttgcaaa				
Bif 164	gggtggaatgccgatg	5.0	66	<i>Bifidobacterium</i>	S10, S8
Bif 662-GC	GC- ccaccgttacaccgggaa				
Lac1	agcagtagggaatcttcca	5.0	58	<i>Lactobacillus</i>	S4
Lac2-GC	GC-attycaccgctacacatg				
CLept-F	gcacaagcagtgaggat	2.0	53	<i>C. leptum</i> group	S2
CLept-R	cttctccgttttgtcaa				
Bfrag-F	aacgtagctacaggctt	1.5	56	<i>Bacteroides</i>	S11
Bfrag-GC-R	GC-caatcggagttcttctgtg				
Ent1017-F	cccttattgtagttgccatcatt	3.0	61	<i>Enterococcus</i>	S11
Ent1263-R	GC-cttagcctcgcgact				
GC clamp	cgccccggggcgccggcgccggccccgggggaccggggg				S5

¹T_a – annealing temperature

Table S3. Denaturing gradient applied in DGGE technique.

Bacterial group	Gradient range (%)¹	Conditions of electrophoretical separation
Eubacteria	25-65	200V, 10 min.; 85V 18 h
<i>Bifidobacterium</i>	45-60	200V, 10 min.; 85V 16 h
<i>Lactobacillus</i>	40-55	200V, 10 min.; 85V 20 h
<i>Enterococcus</i>	40-65	200V, 10 min.; 70V 16 h
<i>Clostridium coccooides</i> group	25-65	200V, 10 min.; 85V 20 h
<i>Clostridium leptum</i> group	25-37.5	85V, 10 min.; 200V 4 h
<i>Bacteroides</i>	25-55	200V, 10 min.; 85V 16 h

¹ 100% concentration of denaturants corresponded to 40% (v/v) formamide and 7 M urea.

Table S4 Specification of the standard diet (SD) used in this study.

Metabolic energy		3279 kcl/kg					
% of calories fom proteins		28 %					
% of calories from fat		14 %					
% of calories fom carbohydrates		58%					
Raw content [%]	[%]	Minerals	[%]	Amino acids	[%]	Trace elemnts	[mg/kg]
Proteins	22.6	Calcium	0.7	Alanine	1.0	Iron	190
Fat	5.0	Phosphorus	0.5	Arginine	1.5	Manganese	77
Fibre	4.5	Magnesium	0.2	Aspartic acid	2.2	Zink	84
Filler	7.1	sodium	0.2	Glutamic acid	4.4	copper	13
Moisture	11.0	Potasium	1.0	Cysteine	0.3	Iodine	1.5
Monosaccharides	0.0			Glicyne	1.0	Selenium	0.3
Disaccharides	5.4			Histidine	0.6	Cobalt	0.4
Polisaccharides	34.3			Isoleucine	1.0		
				Leucine	1.7		
Vitamins/kg	standard			Lysine	1.1		
Vitamin A	15 000 IU			Methionine	0.3		
Vitamin D3	600 IU			Phenylalanine	1.1		
Vitamin B1	18 mg			Proline	1.4		
Vitamin B2	12 mg			Serine	1.1		
Vitamin B6	9 mg			Threonine	0.8		
Vitamin B12	24 µg			Tryptophan	0.3		
Vitamin C	36 mg			Tyrosine	0.8		
Vitamin K3	3 mg			Valine	1.1		
Vitamin E	75 mg						
Folic acid	2 mg						
Biotin	60 µg						
Nicotinic acid	36 mg						
Pantothenic acid	21 mg						
Choline chloride	600 mg						

Table S5 Specification of the high fat diet (HFD) used in this study.

Energy (kcal/g)	kcal	%	
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Protein	0.810	14.9					
Fat (ether extract)	3.226	59,3					
Carbohydrates	1.401	25.8					
Raw content [%]	[%]	Protein [%]	20,2 %	Minerals		Vitamins	
Hydrogenated coconut oil	33.3466	Arginine	0.80	Calcium, %	0.60	Vitamin A, IU/g	4.0
Casein	22.7977	Histidine	0.59	Phosphorus, %	0.64	VitaminD-3 (added), IU/g	1.0
Sucrose	17.4981	Isoleucine	1.09	Potassium, %	0.56	Vitamin E, IU/kg	52.4
Maltodextrin	16.9983	Leucine	1.97	Magnesium, %	0.06	Vitamin K (as menadione), ppm	0.50
AIN-76 Mineral Mix	3.9996	Lysine	1.66	Sodium, %	0.42	Thiamin Hydrochloride, ppm	6.1
Soybean oil	2.4998	Methionine	0.79	Chloride, %	0.23	Riboflavin, ppm	6.8
Sodium Bicarbonate	1.0499	Cysteine	0.08	Fluorine, ppm	0.0	Niacin, ppm	30
AIN-76A Vitamin Mix	1.000	Phenylalanine	1.09	Iron, ppm	42	Pantothenic acid, ppm	16
Potassium citrate, Tribasic Monohydrate	0.400	Tyrosine	1.15	Zink, ppm	41	Folic acid, ppm	2.2
Choline Bitartrate	0.2000	Threonine	0.88	Manganese, ppm	67	Pyridoxine, ppm	5.8
DL-Methionine	0.200	Tryptophan	0.25	Copper, ppm	6.9	Biotin, ppm	0.2
Red dye	0.0100	Valine	1.30	Cobalt, ppm	0.0	Vitamin B-12, mcg/kg	14
		Alanine	0.63	Iodine, ppm	0.24	Choline chloride, ppm	1.00
		Aspartic acid	1.47	Chromium, ppm	2.3	Ascorbic acid, ppm	0.0
		Glutamic acid	4.66	Molybdenum, ppm	0.00		
		Glycine	0.44	Selenium, ppm	0.20		
		Proline	2.69				
		Serine	1.26				
		Taurine	0.00				
		Fat [%]	35.8 %				
		Cholesterol, ppm	0.00				
		Linoleic acid, %	1.28				
		Linolenic acid, %	0.20				
		Arachidonic acid, %	0.00				
		Omega-3 fatty acids	0.20				
		Total saturated fatty acids, %	31.55				
		Total monosaturated fatty acids, %	0.65				
		Polyunsaturated fatty acids, %	1.35				
		Fiber, %	0.00				
		Carbohydrates, %	35.00				

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