

Identification of Independent and Shared Metabolic Responses to High-Fiber and Antibiotic Treatments in Fecal Metabolome of Grow–Finish Pigs

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SUPPORTING INFORMATION

Table S1. Sources of chemicals and reagents used in chemical analysis, LC-MS analysis, structural confirmation and quantification.

Chemicals and reagents	Vendor
Taurocholic acid, Pentadecanoic acid	Acros Organics (Morris Plains, NJ, USA)
<i>p</i> -Chloro-L-phenylalanine	Alexis Biochemicals (San Diego, CA, USA)
Heptadecanoic acid, 2-Hydrazinoquinoline (HQ), Hyodeoxycholic acid, Triphenylphosphine (TPP)	Alfa Aesar (Ward Hill, MA, USA)
Methanol (LC-MS grade)	Avantor performance materials (Radnor, PA, USA)
Bacitracin	Alpharma Inc. (Bridgewater, NJ, USA)
Acetonitrile (LC-MS grade), Ammonium formate, Formic acid (LC-MS grade), Water (LC-MS grade)	Fisher Scientific (Houston, TX, USA)
<i>p</i> -Cresol	Fluka (Buchs, Switzerland)
2-2'-Dipyridyl disulfide (DPDS)	MP Biomedicals, LLC (Irvine, CA, USA)
Fatty acids standards (C4-C22)	Nu-Chek Prep, Inc. (Elysian, MN, USA)
Amino acid mixture (acidic), Amino acid mixture (basic), Dansyl chloride (DC), Deoxycholate, 3-Indoxyl sulfate potassium, Lithocholate, Phenylacetic acid, Sodium deoxycholate, Sodium taurochenodeoxycholate, Taurodeoxycholic acid sodium salt	Sigma-Aldrich (St. Louis, MO, USA)
Lauroylglycine	Santa Cruz Biotech (Santa Cruz, CA, USA)

Table S2. Ingredient and nutrient composition of experimental diets (as-fed basis) ¹

Fiber Phase	Low				High			
	1	2	3	4	1	2	3	4
<i>Ingredients, %</i>								
Corn ²	61.58	64.90	63.27	67.72	49.93	45.51	40.61	36.98
Wheat middlings	10.00	10.00	15.00	15.00	25.00	35.00	45.00	55.00
Soybean meal	24.79	21.75	19.00	14.20	21.38	16.20	11.80	5.18
Poultry fat	1.03	0.71	0.75	0.87	1.03	0.71	0.75	0.87
Calcium carbonate	0.92	0.90	0.79	0.71	1.19	1.17	0.84	0.77
Monocalcium phosphate	0.71	0.58	0.38	0.43	0.56	0.33	0.19	0.18
Salt	0.43	0.43	0.59	0.42	0.43	0.43	0.59	0.42
Titanium dioxide	-	0.20	-	0.20	-	0.20	-	0.20
Sodium carbonate	-	-	-	0.02	-	-	-	0.00
Vitamin/Mineral premix ³	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
DL-Methionine	0.06	0.05	-	0.01	0.04	0.02	-	0.00
L-lysine HCl	0.28	0.28	0.11	0.26	0.26	0.25	0.12	0.25
Threonine	0.09	0.09	0.00	0.06	0.08	0.07	0.00	0.06
Total	100	100	100	100	100	100	100	100
<i>Calculated composition</i>								
Dry matter, %	87.98	87.96	87.88	88.10	87.97	87.93	87.92	88.00
Net Energy, kcal/kg	2400	2400	2400	2440	2289	2219	2202	2169
Crude protein, %	18.72	17.54	16.39	14.94	18.71	17.60	16.39	15.00
Standardized ileal digestible Lys	1.07	1.00	0.80	0.80	1.02	0.92	0.74	0.71
Standardized ileal digestible Met	0.33	0.30	0.24	0.24	0.30	0.27	0.23	0.21
Standardized ileal digestible M+C	0.60	0.56	0.49	0.47	0.57	0.54	0.50	0.47
Standardized ileal digestible Thr	0.66	0.61	0.50	0.50	0.63	0.57	0.46	0.44
Crude fat, %	3.53	3.27	3.67	3.69	3.58	3.36	3.79	3.94
Crude ash, %	4.91	4.79	4.46	4.15	5.35	5.36	4.90	4.78
NDF, %	9.49	9.50	10.95	10.54	12.99	15.35	17.67	19.71
Total Ca, %	0.61	0.57	0.51	0.47	0.70	0.65	0.51	0.47
Digestible P, %	0.23	0.20	0.16	0.16	0.22	0.19	0.15	0.14

¹In each phase of feeding, Bacitracin and fiber are two factors in the 2 × 2 factorial design of 4 diets, including Bacitracin free-low fiber (AF+LF) diet; Bacitracin free-high fiber (AF+HF) diet; Bacitracin-low fiber (AB+LF) diet; Bacitracin-high fiber (AB+HF) diet.

²Bacitracin (25 mg/kg) added at expense of corn

³Premix supplied the following nutrients per kilogram of diet: 60 IU Vitamin E Equivalent, 10,000 IU Vitamin A, 1,600 Vitamin D3 Equivalent, 1.5 mg Thiamine, 8 mg Riboflavin, 50 mg Niacin, 60 mg Pantothenic Acid, 2 mg Pyridoxine, 1.1 mg Folic Acid, 35 µg Vitamin B12, 3.5 mg Menadione, 75 µg Ethoxyquin, 18 mg Copper, 110 mg Iron, 0.7 mg Iodine, 50 mg Manganese, 110 mg Zinc, 0.3 mg Selenium