

Table S1. Product composition of AIN-93M experimental feeds declared by the producer (ZooLab, Sędziszów, Poland).

Ingredient (g/kg)	AIN-93M feed composition		
	OBG_0	OBG_1	OBG_3
Corn starch	467.49	456.49	436.49
Casein	140	140	140
Maltodextrin	155	155	155
Sucrose	100	100	100
Soybean oil	40	40	40
Fiber	50	50	50
Mineral mix (AIN-93g-MX)	35	35	35
Vitamin mix (AIN-93-VX)	10	10	10
Oat beta-glucan	0	11	31
Choline Hydrogen Tartrate	2.5	2.5	2.5
Tert-butylhydroquinone (TBHQ)	0.008	0.008	0.008

Table S2. Declared and analyzed composition of macronutrients (% w/w) in experimental feeds (for analyzed composition mean \pm SD).

Nutrients in feeds	Declared composition			Analyzed Composition		
	OBG_0	OBG_1	OBG_3	OBG_0	OBG_1	OBG_3
Protein	14.0	14.0	14.0	12.86 \pm 1.79	12.73 \pm 1.8	12.84 \pm 1.80
Carbohydrates	72.25	71.15	69.15	75.9*	76.2*	75.6*
Fat	4.0	4.0	4.0	4.5 \pm 1.4	4.4 \pm 1.3	4.6 \pm 1.4
Fiber	5.0	5.0	5.0	3.8 \pm 0.5	4.0 \pm 0.7	4.1 \pm 0.7
beta-glucan	0.0	1.1	3.1	0.1 \pm 0.02	1.06 \pm 0.09	3.22 \pm 0.56
Metabolizable energy [MJ/kg] (kcal/kg)	16.52 (3946,7)	16.22 (3873,4)	15.66 (3740,1)	–	–	–

* The carbohydrates content was calculated from the difference based on the content of water, protein, fat and ash

Table S3. Results of histopathological examination of intestinal crypts.

Rat number	Grup	Feed	Results of histopathological examination of intestinal crypts.
39	Control	OBG_0	No changes in crypt epithelial cells
40	Control	OBG_0	No changes in crypt epithelial cells
41	Control	OBG_0	No changes in crypt epithelial cells
42	Control	OBG_0	No changes in crypt epithelial cells
43	Control	OBG_0	No changes in crypt epithelial cells

44	Control	OBG_0	No changes in crypt epithelial cells
45	Control	OBG_0	No changes in crypt epithelial cells
25	Control	OBG_1	No changes in crypt epithelial cells
26	Control	OBG_1	No changes in crypt epithelial cells
27	Control	OBG_1	No changes in crypt epithelial cells
28	Control	OBG_1	No changes in crypt epithelial cells
29	Control	OBG_1	No changes in crypt epithelial cells
30	Control	OBG_1	No changes in crypt epithelial cells
31	Control	OBG_1	No changes in crypt epithelial cells
32	Control	OBG_3	No changes in crypt epithelial cells
33	Control	OBG_3	No changes in crypt epithelial cells
34	Control	OBG_3	No changes in crypt epithelial cells
35	Control	OBG_3	No changes in crypt epithelial cells
36	Control	OBG_3	Hyperplasia
37	Control	OBG_3	No changes in crypt epithelial cells
38	Control	OBG_3	No changes in crypt epithelial cells
17	CRC	OBG_0	Hyperplasia
18	CRC	OBG_0	Hyperplasia
19	CRC	OBG_0	Hyperplasia
20	CRC	OBG_0	No changes in crypt epithelial cells
21	CRC	OBG_0	No changes in crypt epithelial cells
22	CRC	OBG_0	No changes in crypt epithelial cells
23	CRC	OBG_0	Hyperplasia
24	CRC	OBG_0	Hyperplasia
1	CRC	OBG_1	Hyperplasia
2	CRC	OBG_1	No changes in crypt epithelial cells
3	CRC	OBG_1	No changes in crypt epithelial cells
4	CRC	OBG_1	No changes in crypt epithelial cells
5	CRC	OBG_1	No changes in crypt epithelial cells
6	CRC	OBG_1	Hyperplasia
7	CRC	OBG_1	No changes in crypt epithelial cells
8	CRC	OBG_1	No changes in crypt epithelial cells
9	CRC	OBG_3	No changes in crypt epithelial cells
10	CRC	OBG_3	No changes in crypt epithelial cells
11	CRC	OBG_3	No changes in crypt epithelial cells
12	CRC	OBG_3	No changes in crypt epithelial cells
13	CRC	OBG_3	No changes in crypt epithelial cells
14	CRC	OBG_3	Hyperplasia
15	CRC	OBG_3	No changes in crypt epithelial cells
16	CRC	OBG_3	No changes in crypt epithelial cells