

1 **Appendix A. Supplementary data**

2 **Table S1** Nucleotide sequences of primers used for polymerase chain reaction

Gene name	Sequence (5' to 3')	GenBank ID	Product length(bp)
<i>β-actin</i>	F: CATTGCTGACAGGATGCAGAAGG	NM_007393.5	138
	R: TGCTGGAAGGTGGACAGTGAGG		
<i>OCN</i>	F: GTACCCACCAGTGACCAACA	NM_029865.2	122
	R: GTTGCTGGAGCTTAGCCTGT		
<i>CLDN1</i>	F: TGGGTTTCATCCTGGCTTCTC	NM_016674.4	163
	R: TGTATCTGCCCGGTGCTTTG		
<i>MUC1</i>	F: AGGACTTCTGGTAGGCTGTTC	NM_013605.2	179
	R: GGAGGCCATCTTTTATTCAGCTA		
<i>MUC2</i>	F: AGGGCTCGGAACTCCAGAAA	NM_023566.4	106
	R: CCAGGGAATCGGTAGACATCG		
<i>ZO1</i>	F: AGATGTTTATGCGGACGGTGG	NM_009386.3	143
	R: CTGTTTCCTCCATTGCTGTGC		
<i>ZO2</i>	F: TGCAGCTTGTAGTTCTGAGCC	NM_001198985.2	149
	R: ACTGCTCCCATATCACCTCCT		
<i>KEAP1</i>	F: AAGTGTGAGATCCTGCAGGC	NM_001110305.1	133
	R: CTGTGTAGATGAGGCGGCC		
<i>NRF2</i>	F: CCATGAGTCGCTTGCCCTGGATA	NM_010902.5	153
	R: AGCTCCTGCCAAACTTGCTCCA		
<i>ATF3</i>	F: ACCCCTGGAGATGTCAGTCA	NM_007498.3	106
	R: GTTTCGACACTTGGCAGCAG		
<i>PTGS2</i>	F: AGCCATTGAACCTGGACTG	NM_011198.5	125
	R: ACCCAATCAGCGTTTCTCGT		
<i>NQO1</i>	F: GTGAGCTGAAGGACTCGAAGA	NM_008706.5	124
	R: ATCACCAGGTCTGCAGCTTC		
<i>HO1</i>	F: AGCGCAACAAGCAGAACCCA	NM_010442.2	131

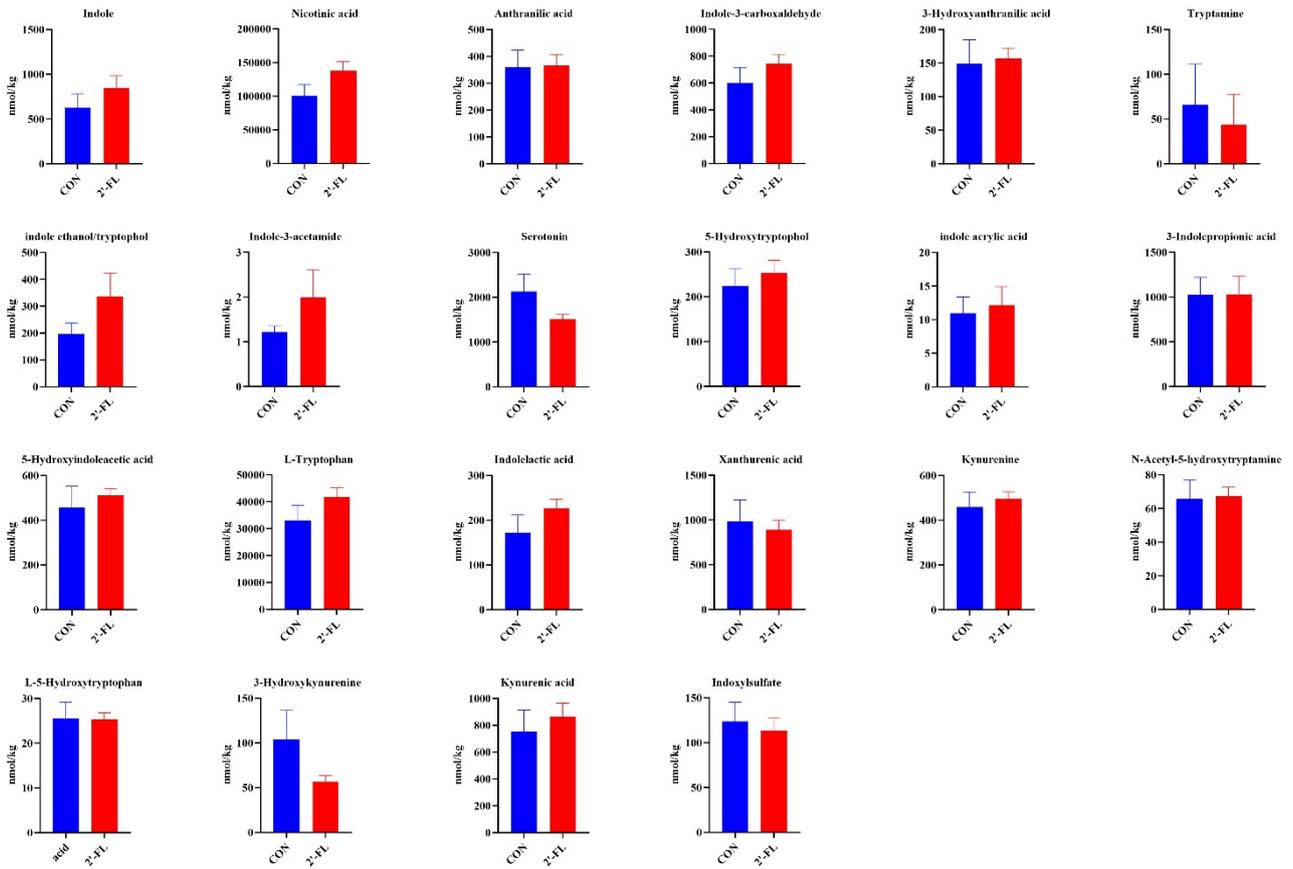
	R: TGGCGTGCAAGGGATGATTTCC		
<i>SOD1</i>	F: AGCATGGGTTCCACGTCCATCA	NM_011434.2	155
	R: ACCGTCCTTTCCAGCAGTCACA		
<i>SOD2</i>	F: GGTAATGGTGCCTCTGGGTT	NM_013671.3	135
	R: TGGCTGACATCATCGGACAG		
<i>CAT</i>	F: GCCAGAAGAGAAACCCACAGACTCAC	NM_009804.2	149
	R: TCCATAGCCATTCATGTGCCGGT		
<i>GPX1</i>	F: AGTTCGGACACCAGAATGGC	NM_001329527.1	144
	R: GGAAGGTAAAGAGCGGGTGA		
<i>GPX4</i>	F: GGAGCCCATTCTGAACCTTT	NM_001037741.4	150
	R: TCGATGTCCTTGGCTGAGAAT		
<i>IL1<math>\beta</math></i>	F: ACCTGTGTCTTTCCCGTGG	NM_008361.4	162
	R: TCATCTCGGAGCCTGTAGTG		
<i>IL4</i>	F: TGTCATCCTGCTCTTCTTTCTCG	NM_021283.2	162
	R: GTGTTCTTCGTTGCTGTGAGG		
<i>IL6</i>	F: CTTCATCCAGTTGCCTTCTTG	NM_031168.2	142
	R: AATTAAGCCTCCGACTTGTGAAG		
<i>IL10</i>	F: CAGTGGAGCAGGTGAAGAGT	NM_010548.2	157
	R: GTCCAGCAGACTCAATACACAC		
<i>IL17</i>	F: GTCTTTAACTCCCTTGGCGCA	NM_010552.3	130
	R: GAGCTTCCCAGATCACAGAGG		
<i>IL22</i>	F: TCGCCTTGATCTCTCCACTC	NM_016971.2	107
	R: GCTCAGCTCCTGTCACATCA		
<i>TNF<math>\alpha</math></i>	F: CTCTGTGAAGGGAATGGGTGT	NM_013693.3	148
	R: AGAGTTGGACCCTGAGCCAT		
<i>AHR</i>	F: TCTAAGCGACACAGAGACCG	NM_013464.4	170
	R: GCAGGGGTGGACTTTAATGC		
<i>CYP1A1</i>	F: CCTGTCCTCCGTTACCTGCC	NM_009992.4	143
	R: AGGCTGTCTGTGATGTCCCG		

<i>CYP1B1</i>	F: AAGCGTTGGATGGGTGGAAA R: GCCTAATGAAACAGAGCCAGC	NM_001364889.1	133
<i>NFκB</i>	F: CCCTACGGAAGCTGGGCAAAT R: GCGGAATCGAAATCCCCTCT	NM_001410442.1	153
<i>MLCK</i>	F: AGTGCCTGAAACACGAGTGG R: TTCCGTAGCCTGTTGACTGC	NM_001297612.1	154

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3 *OCN*, occludin; *CLDN1*, claudin-1; *MUC1*, mucin-1; *MUC2*, mucin-2; *ZO1*, zonula  
4 occludens-1; *ZO2*, zonula occludens-2; *KEAP1*, kelch-like ECH-associated protein-1;  
5 *NRF2*, nuclear factor erythroid-derived 2-related factor-2; *ATF3*, activating  
6 transcription factor-3; *PTGS2*, prostaglandin-endoperoxide synthase-2; *NQO1*,  
7 NAD(P)H: quinone oxidoreductase-1; *HO1*, heme oxygenase-1; *SOD1*, superoxide  
8 dismutase-1; *SOD2*, superoxide dismutase-2; *CAT*, catalase; *GPX1*, glutathione  
9 peroxidase-1; *GPX4*, glutathione peroxidase-4; *IL1β*, interleukin-1 beta; *IL4*,  
10 interleukin-4; *IL6*, interleukin-6; *IL10*, interleukin-10; *IL17*, interleukin-17; *IL22*,  
11 interleukin-22; *TNFα*, tumor necrosis factor; AHR, aryl hydrocarbon receptor;  
12 CYP1A1, cytochrome P450 family 1 subfamily A member 1; CYP1B1, cytochrome  
13 P450 family 1 subfamily B member 1; NFκB, nuclear factor kappa B; MLCK, myosin  
14 light-chain kinase.

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16 **Figure S1.** The concentrations of non-significantly differed tryptophan metabolites in  
 17 feces of mice. CON, control mice orally gavaged with PBS; 2'-FL, mice orally gavaged  
 18 with 2'-fucosyllactose. The data are expressed as mean  $\pm$  SE (n = 12).