**Supplementary Materials**

Supplementary Table 1.Composition of diets (as-fed basis, %)1

|  |  |  |
| --- | --- | --- |
|  | Dietary treatment, % | |
| Item | CON | TA |
| Ingredient |  |  |
| Corn | 28.33 | 28.23 |
| Expanded corn | 30 | 30 |
| Soy protein concetrate | 6 | 6 |
| Soybean meal,43% CP | 8 | 8 |
| Fish meal,63% CP | 5 | 5 |
| Whey | 15 | 15 |
| Glucose | 3 | 3 |
| Soybean oil | 0.5 | 0.5 |
| Limestone | 0.86 | 0.86 |
| Calcium hydrogen phosphate | 0.4 | 0.4 |
| Choline chloride, 50% | 0.1 | 0.1 |
| Antioxidants2 | 0.05 | 0.05 |
| Citric acid | 0.8 | 0.8 |
| Salt | 0.1 | 0.1 |
| Vitamin-mineral premix3 | 0.45 | 0.45 |
| Tannic acid | 0 | 0.1 |
| Zinc oxide | 0.2 | 0.2 |
| L-Lysine, 98% | 0.58 | 0.58 |
| DL-Methionine | 0.38 | 0.38 |
| L-Threonine | 0.19 | 0.19 |
| L-Tryptophan | 0.06 | 0.06 |
| Total | 100 | 100 |
| Calculated composition |  |  |
| CP | 18 | 18 |
| ME, MJ/kg | 14.2 | 14.2 |
| Lysine4 | 1.35 | 1.35 |
| Methionine4 | 0.39 | 0.39 |
| Methionine + Cysteine4 | 0.74 | 0.74 |
| Threonine4 | 0.79 | 0.79 |
| Trptophane4 | 0.22 | 0.22 |

1CON, basal diet, TA, basal diet supplemented with 1000 mg/kg microencapsulated tannic acid (30% effective concentration).

2Antioxidants contained 60g/kg butylhydroquinone and 180g/kg ethoxyquinoline.

3Vitamin-mineral premix supplied per kilogram of feed: 10,000 IU of vitamin A, 1,000 IU of vitamin D3, 80 IU of vitamin E, 2.0 mg of vitamin K3, 0.03 mg of vitamin B12, 12 mg of riboflavin, 40 mg of niacin, 25 mg of d-pantothenic acid, 0.25 mg of biotin, 1.6 mg of folic acid, 3.0 mg of thiamine, 2.25 mg of pyridoxine, 300 mg of choline chloride, 150 mg of Fe (FeSO4), 100 mg of Zn (ZnSO4), 30 mg of Mn (MnSO4), 25 mg of Cu (CuSO4), 0.5 mg of I (KIO3), 0.3 mg of Co (CoSO4), 0.3 mg of Se (Na2SeO3), and 4.0 mg of ethoxyquin.

4Standardized ileal-digestible.

Supplementary Table 2. Primers used in this study

|  |  |  |
| --- | --- | --- |
| Gene | Nucleotide sequence of primers (5’–3’) | Product length |
| Keap1 | GTGTGGAGAGGAGTCTGTGTC | 112 |
|  | TCCACGTTTCTGTCTCCACG |  |
| Nrf2 | AAGTCAGAGTCGGCTGCAT | 200 |
|  | ATTGCGCAACAGATCAACAGC |  |
| Claudin-1 | CTAGTGATGAGGCAGATGAA | 250 |
|  | AGATAGGTCCGAAGCAGAT |  |
| ZO-1 | TTGATAGTGGCGTTGACA | 126 |
|  | CCTCATCTTCATCATCTTCTAC |  |
| Occludin | GAGTGATTCGGATTCTGTCT | 167 |
|  | TAGCCATAACCATAGCCATAG |  |
| TNF-α | ACAGGCCAGCTCCCTCTTAT | 102 |
|  | CCTCGCCCTCCTGAATAAAT |  |
| IL-6 | AGACCCTGAGGCAAAAGGGAAA | 209 |
|  | CGGCATCAATCTCAGGTGCC |  |
| β-actin | AGTTGAAGGTGGTCTCGTGG | 216 |
|  | TGCGGGACATCAAGGAGAAG |  |