

Transversal gene expression panel to evaluate intestinal health in broiler chickens in different challenging conditions

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Supplementary Table 1. Effect of *C.perfringens* challenge on growth performance of broiler chickens.

Items	Conditions		SEM	P-value
	Cages	Challenge		
BW, g				
0 d	43.8	43.6	0.11	0.151
10 d	246.1 ^a	228.4 ^b	6.17	0.044
28 d	1484.9 ^a	1020.0 ^b	31.14	<0.001
42 d	2822.4 ^a	1912.1 ^b	56.27	<0.001
ADG, g/d				
0-10 d	20.2	18.6	0.61	0.056
10-28 d	68.8 ^a	43.1 ^b	1.79	<0.001
28-42 d	95.5 ^a	67.2 ^b	2.40	<0.001
0-42 d	66.1 ^a	44.7 ^b	1.30	<0.001
ADFI, g/d				
0-10 d	31.6 ^a	26.3 ^b	0.75	<0.001
10-28 d	95.2	82.9	5.37	0.099
28-42 d	163.6	152.8	6.88	0.247
0-42 d	101.6	92.6	3.36	0.057
FCR				
0-10 d	1.31 ^b	1.71 ^a	0.062	<0.001
10-28 d	1.38 ^b	1.93 ^a	0.114	0.002
28-42 d	1.71 ^b	2.30 ^a	0.121	0.002
0-42 d	1.54 ^b	2.07 ^a	0.052	<0.001

^(a,b) Values with different superscript letters indicate significant differences between groups ($P \leq 0.05$).

Supplementary Table 2. Effect of *C.perfringens* challenge on ileal morphological parameters of broiler chickens on day 42

Items	Conditions		SEM	P-value
	Cages	Challenge		
Villus height (µm)	933.1 ^a	828.6 ^b	29.43	0.016
Crypt depth (µm)	88.9 ^b	219.6 ^a	6.46	<0.001
Villus height/crypt depth (µm)	10.5 ^a	3.77 ^b	0.29	<0.001
Goblet cells/100 µm VH	11.6	15.8	1.29	0.139
Intraepithelial Lymphocytes/100 µm VH	2.3 ^b	7.9 ^a	0.45	<0.001

^(a,b)Values with different superscript letters indicate significant differences between groups ($P \leq 0.05$).

Supplementary Table 3. Relative gene expression differences between broiler chickens raised either in cages or under *Clostridium perfringens* challenge conditions

Function	Gene	Experimental treatments		Contrast Statistic	P-value	FDR
		Cages	Challenge			
Barrier function	<i>CLDN1</i>	1.43	0.64	12.136	0.004	0.009
	<i>FABP2</i>	1.68	0.33	51.544	<0.001	<0.001
	<i>FABP6</i>	1.39	0.83	4.889	0.045	0.077
	<i>JAM2</i>	1.45	1.1	1.276	0.279	0.361
	<i>JAM3</i>	0.99	0.95	0.011	0.986	0.986
	<i>MUC13</i>	2.32	0.37	12.857	0.003	0.009
	<i>MUC2</i>	1.36	0.83	8.933	0.01	0.022
	<i>OCLN</i>	1.67	0.65	34.891	<0.001	<0.001
	<i>TJP1</i>	1.57	0.81	50.084	<0.001	<0.001
	<i>TJP2</i>	1.37	0.84	15.35	0.002	0.005
Digestive hormone	<i>GHRL</i>	1.23	0.69	5.649	0.033	0.061
Immune response	<i>AHSA1</i>	1.41	1.12	1.348	0.266	0.355
	<i>AvBD6</i>	0.94	0.58	0.819	0.382	0.445
	<i>HSPA4</i>	1.34	1.06	4.965	0.044	0.077
	<i>IFNG</i>	0.24	1.79	82.337	<0.001	<0.001
	<i>IL10</i>	0.05	1.61	226.069	<0.001	<0.001
	<i>IL18</i>	0.56	1.43	45.503	<0.001	<0.001
	<i>IL1B</i>	0.55	1.19	9.582	0.009	0.02
	<i>IL22</i>	0.34	2.3	18.752	0.001	0.002
	<i>IL4</i>	2.45	2.46	0.888	0.363	0.444
	<i>IL8</i>	0.4	1.68	45.243	<0.001	<0.001
	<i>NOS2</i>	0.82	1.3	2.855	0.115	0.158
	<i>PTGES</i>	0.83	0.9	0.143	0.711	0.745
	<i>TLR2</i>			7.153	0.019	0.038
	<i>TLR4</i>	1.43	1.16	0.894	0.362	0.444
	<i>TNFa</i>	1.43	0.96	22.629	<0.001	0.001
Metabolism	<i>COX16</i>	1.28	1.06	5.933	0.03	0.057
	<i>EIF4EBP1</i>	1.07	0.76	3.985	0.067	0.101
	<i>mTOR</i>	1.27	0.87	19.79	0.001	0.002

	<i>RPS6KB1</i>	1.31	0.98	4.458	0.055	0.089
Nutrient transport	<i>SLC15A1</i>	0.87	0.68	0.812	0.384	0.445
	<i>SLC1A1</i>	1.57	0.6	49.909	<0.001	<0.001
	<i>SLC1A4</i>	1.72	0.69	33.85	<0.001	<0.001
	<i>SLC2A2</i>	1.19	0.81	4.227	0.06	0.095
	<i>SLC34A2</i>	1.3	0.96	9.012	0.01	0.022
	<i>SLC3A1</i>	1.01	1.3	3.8631	0.072	0.101
	<i>SLC5A1</i>	1.07	0.85	3.8497	0.072	0.101
	<i>SLC7A7</i>	0.87	1.11	0.5939	0.455	0.468
	<i>VDR</i>	1.49	0.6	26.0385	<0.001	0.001
Oxidation	<i>GPX7</i>	1.03	1.31	0.7593	0.399	0.45
	<i>HIF1A</i>	1.05	0.97	0.5694	0.464	0.498
	<i>HMOX2</i>	1.46	0.82	41.0743	<0.001	<0.001
	<i>SOD1</i>	1.55	0.69	38.5423	<0.001	<0.001
	<i>XDH</i>	1.03	1.01	0.0247	0.877	0.898

Supplementary Table 4. Effect of dietary treatments on BW of broiler chickens before (d7 and 9) and after *Eimeria* challenge (d15)

	NC	NC+coccidiostat	SEM	<i>P</i> -value
BW7	158	158	0.92	0.99
BW9	220	223	1.9	0.62
BW15	383 ^b	464 ^a	4.3	<0.001

Supplementary Table 5. Relative gene expression differences between broiler chickens receiving the negative control diet before and after the challenge

Function	Gene	Experimental treatments		Contrast Statistic	P-value	FDR
		Before challenge	After challenge			
Barrier Function	CLDN1	8.43	2.66	16.1921	<0.001	0.007
	FABP2	3.73	3.61	0.0034	0.954	0.954
	FABP6	4.2	2.66	13.5261	0.001	0.01
	JAM2	3.67	4.77	10.1648	0.004	0.019
	JAM3	3.74	4.37	4.1972	0.051	0.132
	MUC13	1.09	2.04	2.4192	0.132	0.257
	MUC2	4.24	3.9	0.2438	0.626	0.744
	OCLN	3.69	4.26	2.949	0.098	0.206
	TJP1	3.6	4.33	11.326	0.002	0.014
	TJP2201	3.58	3.77	0.8324	0.37	0.537
Digestive hormone	GHRL	4.73	6.22	3.2513	0.083	0.193
Immune response	AHSA1	3.85	3.75	0.1736	0.68	0.768
	AVBD6	5.07	2.45	1.907	0.18	0.317
	HSPA4	3.5	4.08	11.8148	0.002	0.013
	IFNG	1.34	5.1	52.3817	< 0.001	< 0.001
	IL1b	3.99	4.35	0.9611	0.336	0.51
	IL18	4.01	3.9	0.0065	0.936	0.954
	IL8	7.76	4.61	2.3922	0.135	0.257
	IL10	3.01	4.64	4.9098	0.036	0.106
	IL22	5.22	4.36	0.0545	0.817	0.877
	IL4	2.65	4.56	2.1634	0.156	0.286
	NOS2	3.53	4.62	6.2806	0.019	0.07
	PTGES	3.84	4.26	1.3449	0.257	0.419
	TLR2	3.41	3.93	3.5192	0.072	0.177
	TLR4	4.53	4.68	0.208	0.652	0.755
	TNFa	4	3.74	0.735	0.399	0.549
Metabolism	EIF4EBP1	3.8	3.93	0.5748	0.455	0.572
	COX16	4.27	4.24	0.0085	0.927	0.954
	mTOR	3.66	4.04	6.0078	0.022	0.073
	RPS6KB1	3.79	4.16	8.6725	0.007	0.03
	SLC1A4	4.24	3.96	1.2647	0.271	0.427

Nutrient transport	SLC5A1	3.81	3.72	0.1452	0.706	0.777
	SLC15A1	2.71	4.7	15.2767	<0.001	0.007
	SLC1A1	3.74	3.18	1.3593	0.255	0.419
	SLC2A2	5.39	2.05	6.8316	0.015	0.06
	SLC34A1	3.52	3.88	0.8044	0.378	0.537
	SLC34A2	4.41	3.52	0.5873	0.451	0.573
	SLC7A7	5.07	4.44	0.5219	0.477	0.583
	VDR	3.52	4.25	4.408	0.046	0.127
Oxidation	GPX7	3.91	3.65	0.6674	0.422	0.562
	HIF1a	3.33	3.99	12.1811	0.002	0.013
	HMOX2	3.93	4.33	3.0336	0.094	0.206
	SOD1	3.43	4.58	5.3382	0.029	0.092
	XDH	2.83	4.8	28.8664	< 0.001	< 0.001

Supplementary Table 6. Relative gene expression differences between broiler

chickens fed the negative control diet and those supplemented with coccidiostat

Function	Gene	Experimental treatments		Contrast Statistic	P-value	FDR
		NC	NC+ coccidiostat			
Barrier function	CLDN1	2.66	2.99	0.8113	0.378	0.573
	FABP2	3.61	4.34	2.7035	0.115	0.316
	FABP6	2.66	3.04	1.5408	0.228	0.441
	JAM2	4.77	5.96	6.9324	0.016	0.168
	JAM3	4.37	5.02	4.5323	0.045	0.173
	MUC13	2.04	1.08	4.4434	0.047	0.173
	MUC2	3.9	4.51	3.9469	0.06	0.192
	OCLN	4.26	4.17	0.0476	0.83	0.942
	TJP1	4.33	4.92	4.5548	0.045	0.173
	TJP2201	3.77	4.25	5.7458	0.025	0.17
Digestive hormone	GHRL	6.22	6.58	0.0447	0.835	0.942
Immune response	AHSA1	3.75	3.31	5.6509	0.027	0.17
	AVBD6	2.45	4.13	1.2902	0.269	0.48
	HSPA4	4.08	4.16	0.113	0.74	0.942
	IFNG	5.1	2.68	21.7646	<0.001	0.006

	IL1b	4.35	3.89	0.9355	0.345	0.541
	IL18	3.9	4.49	2.0069	0.171	0.377
	IL8	4.61	5.24	1.0535	0.316	0.535
	IL10	4.64	3.48	2.5605	0.125	0.322
	IL22	4.36	6.29	1.2702	0.272	0.48
	IL4	4.56	1.67	4.9237	0.038	0.173
	NOS2	4.62	4.57	0.0006	0.98	0.992
	PTGES	4.26	4.15	0.0679	0.797	0.942
	TLR2	3.93	3.98	0.0044	0.948	0.992
	TLR4	4.68	5.31	3.7774	0.066	0.192
	TNF	3.74	3.3	4.8711	0.039	0.173
Metabolism	EIF4EBP1	3.93	3.96	0.0001	0.992	0.992
	COX16	4.24	4.17	0.0852	0.773	0.942
	mTOR	4.04	4.07	0.0335	0.857	0.942
	RPS6KB1	4.16	4.33	0.9945	0.33	0.538
Nutrient transport	SLC1A4	3.96	4.53	6.4506	0.019	0.168
	SLC5A1	3.72	3.78	0.0444	0.835	0.942
	SLC15A1	4.7	4.94	0.2814	0.601	0.827
	SLC1A1	3.18	4.33	9.7792	0.005	0.075
	SLC2A2	2.05	1.86	0.0161	0.9	0.966
	SLC34A1	3.88	4.66	2.2767	0.146	0.339
	SLC34A2	3.52	3.11	0.7228	0.405	0.594
	SLC7A7	4.44	6.21	9.7764	0.005	0.073
	VDR	4.25	4.57	0.5495	0.467	0.662
Oxidation	GPX7	3.65	4.32	3.7764	0.066	0.192
	HIF1a	3.99	4.27	1.7039	0.206	0.431
	HMOX2	4.33	4	2.407	0.136	0.332
	SOD1	4.58	4.24	1.5262	0.23	0.441
	XDH	4.8	4.92	0.2369	0.632	0.842

Supplementary Table 7. Basal diet composition.

	Starter		Growing		Finishing	
	Cages	Challenge	Cages	Challenge	Cages	Challenge
Ingredient composition, g/kg diet						
Maize	550	412	582	403	632	405
Wheat	***	150	***	200	***	250
Soybean meal 48	303	288	350	326	282	255
L-lysine HCL	1.2	1.5	0.2	0.7	1	1.6
DL-methionine	2.4	2.3	1.3	1.3	1.5	1.4
L-threonine	***	***	***	***	0.2	0.5
Soy oil	8	11	19	14	***	***
Palm oil	***	***	17	25	57	60
Enersoy-3600 (3002)	100	100	***	***	***	***
Limestone	10.3	10.9	6.3	7	5.8	7
Dicalcium phosphate	15.7	14.9	15.5	14.4	11.8	10.8
Salt	2	2	2	2	2.1	2
Premix*	4	4	4	4	4	4
Sodium bicarbonate	3.4	3.4	2.7	2.6	2.6	2.7
Calculated composition (%)						
Dry matter	87.8	88.1	87.9	88.1	88	88.4
M.E (kcal/kg)	2975	2975	3101	3101	3248	3249
Crude protein	22	22	21	21	18	18
Lysine	1.35	1.35	1.18	1.18	1.06	1.06

Methionine	0.59	0.58	0.47	0.46	0.45	0.43
Ca	0.95	0.95	0.78	0.78	0.65	0.67
Total P	0.65	0.64	0.63	0.62	0.54	0.53
Available P	0.45	0.45	0.44	0.44	0.37	0.37
Analyzed composition (%)						
Dry matter	88.5	90.2	88.2	90.4	88.3	90.6
GE, kcal/kg	4100	4081	4300	4332	4390	4395
Crude protein	20.9	20.5	21.4	21.3	17.9	18.5
Ether extract	0.43	0.48	0.54	0.6	0.76	0.79

Basal diet composition for broilers from 1 to 42 days (g/kg diet as fed-basis). (*)
 Provided per kg of feed: vitamin A (retinyl acetate) 10.000 UI; vitamin D3 (cholecalciferol) 4.800 UI; vitamin B1 (Thiamine) 3 mg; vitamin B2 (riboflavin) 9 mg; vitamin B3 (Nicotinamide) 51 mg; vitamin B6 (pyridoxine chlorhydrate) 4.5 mg; vitamin B9 (folic acid) 1.8; vitamin B12 (cyanocobalamin) 0.04 mg; vitamin E (acetate de tot-rac-3-tocopherol): 45 mg; vitamin K3 (Menadione) 3 mg; pantothenic acid (calcium D-pantothenate) 16.5 mg, biotin (D-(+)-biotin) 0.15 mg; Chloride of choline 350 mg; iron (FeSO₄) 54 mg; iodine (Ca(IO₃)₂) 1.2 mg; ; zinc (ZnO) 66 mg; manganese (MnO) 90 mg; copper (CuSO₄) 12 mg; selenium (Na₂SeO₃) 0.2 mg; 6-Phytase EC 3.1.3.26 : 1500 FYT; Butylated hydroxytoluene (BHT) 25 mg ; Colloidal silica 45 mg, Sepiolite 1007 mg

Supplementary Table 8. List of primers used for the analyses of gene expression of 48 genes by RT-qPCR.

Gene symbol	Gene Name	Gene Reference Sequence	Forward Primer (5' -> 3')	Reverse Primer (5' -> 3')
<i>CLDN 1</i>	Claudin-1	ENSGALG00000026862	CTTCATCATTGCAGGTCTGT CA	TTAACAGGTGTGAAAGGG TCATAGAA
<i>FABP2</i>	Fatty Acid Binding Protein 2	ENSGALG00000011986	GCTGACGGGACTGAACTTT CA	CGCTGTGAGTACTTTTCCA TTATCTTT
<i>FABP6</i>	Fatty Acid Binding Protein 6	ENSGALG00000001445	ACTATAGACAAGGAAGCA GACATGGA	TCCATTTTGACTGTTGCCT TGA
<i>JAM2</i>	Junctional Adhesion Molecule 2	ENSGALG00000015746	CATGAAGCGAATGCAAGTT GA	CCATTACCAGAGCCACAA TTACTACA
<i>JAM3</i>	Junctional Adhesion Molecule 3	ENSGALG00000001472	AGGAGCAGGAGATGGAAG TCTATG	TGTAGGCACAGCAGATAC CAAGAG

<i>MUC13</i>	Mucin-13	ENSGALG00000011806	GACTGATTTTGAAGTTCAG GAAGCA	CATTGGGATGTATTTCGCT ACTG
<i>MUC2</i>	Mucin-2	ENSGALG00000031737	TGGAGGCAAAGTGTCTGCT CT	TAATAGCATGGGCATTGCG AGAT
<i>OCLN</i>	Occludin	ENSGALG00000037316	CTGCTCTGCCTCATCTGCTT CT	GCGCGGTCCAGTAGATG T
<i>TJP1</i>	Tight Junction Protein 1	ENSGALG00000042552	CCATTTTTGGTCCAATAGCT GAT	CTCTCGGTTCACTTTTTGC AATT
<i>TJP2</i>	Tight Junction Protein 2	ENSGALG00000015109	TGAAATAGAGTCAAACAGA TCGTTCTC	TATTGGATGGATCATCTTT TGCAT
<i>GHRL</i>	Ghrelin and Obestatin Prepropeptide	ENSGALG00000008411	GCTCTGGCTGGCTCTAGTTT TTTA	GGTTTTCTTGTATCCTTTTG TTGC
<i>AHSA1</i>	Activator Of HSP90 ATPase Activity 1	ENSGALG00000010463	TTGATGAAGTGGAGATCCT TGTC	CCTTCTTGCTTCATCAGGG TCTT
<i>AvBD6</i>	Avian Beta- defensin 6	ENSGALG00000016668	CTTGCTGTGTAGGAACAG GTG	TTTGGTAGTTCAGGCAGG AT
<i>AvBD9</i>	Avian Beta- defensin 9	ENSGALG00000019845	TCCAGGCTGCTCCAGCTT	GGCTCTGCCTGCATGCTAA
<i>HSPA4</i>	Heat Shock Protein Family A (Hsp70) Member 4	ENSGALG00000040882	TGAGACTAATAAATGAATC AACTGCAGT	CCCCATATCCACAAAAAC AACA
<i>IFNG</i>	Interferon Gamma	ENSGALG00000009903	GACAGAGAGAAATGAGAA AAGGATCA	CAGTGTTTTCAAGCATTC CAAGT
<i>IL10</i>	Interleukin 10	ENSGALG00000000892	CTGAGGGTGAAGTTTGAGG AAAT	AGCCAAAGGTCCCCTTAA ACTC
<i>IL18</i>	Interleukin 18	ENSGALG00000007874	CAGATTAAACGTGGCAGC TTTT	CGAAGTACATTCCACTGCC AGAT
<i>IL1B</i>	Interleukin 1 Beta	ENSGALG00000029940	CGCTACACCCGCTCACAGT	GCAATGTTGAGCCTCACTT TCTG
<i>IL22</i>	Interleukin 22	ENSGALG00000009904	ACCTACACCTTGGCTGAAA TGG	TGCTGACCGATGAGTCTGT TG
<i>IL4</i>	Interleukin 4	ENSGALG00000006827	TTATGCAAAGCCTCCACAA TTG	GTGGGACATGGTGCTTG AG
<i>IL8</i>	Interleukin 8	ENSGALG00000026098	CCACTGCTCCCTGGGTACA G	TCAGAATTGAGCTGAGCC TTG
<i>NOS2</i>	Nitric Oxide Synthase 2	ENSGALG00000038096	CTCCAGCAGAGCTTCTACC TCAA	GCCAGGTGCTCTTCTATTT TTAATTC
<i>PTGES</i>	Prostaglandin E Synthase	ENSGALG00000046708	TAAAGATGTATGTCGTTGC CATCAT	ATCCTCTGGGTTAGCAAAT GCCT
<i>TLR2</i>	Toll Like Receptor 2	ENSGALG00000009239	AGGCGATCCCAAGAGGTTT T	TTTCCCAAACATCTGCTG TTG
<i>TLR4</i>	Toll Like Receptor 4	ENSGALG00000007001	CAGTCCGTGCCTGGAGGT	TTGAGCTTAGCAATTTTCAG ACTGTTG
<i>TNF</i>	Tumor Necrosis Factor Alpha	ENSGALG00000003217	TGTTTCTGCCTCTGCCATCA G	AAGCCACTAGGAGCAGAC ATGATATAT
<i>COX16</i>	Cytochrome C Oxidase Assembly Homolog	ENSGALG00000020449	CCTGCTTTGAAGGAAAAAT TGAAG	CCAAGTCAGATTGTTCCAA TTTCTC
<i>EIF4E BP1</i>	Eukariotic initiation factor 4E binding protein	ENSGALG00000003205	ATTGAGAACAACCATGTCC AGAAC	ATGTCAAACCTGCTCTTCTT CACCT
<i>mTOR</i>	Mechanistic Target of Rapamycin Kinase	ENSGALG00000003339	TGCTGACAAACGCTATGGA GGT	AGCCATGACACTGTCTTA TGCT
<i>RPS6K B1</i>	Ribosomal Protein S6 Kinase B1	ENSGALG00000005198	ACACCTGTTGATAGCCCAG ATGA	GCCACATACGTAAACCC AGAAA
<i>SLC15 A1</i>	Solute Carrier Family 15 Member 1	ENSGALG00000016884	CCATGGAGTCAACAGGCTA CAG	CTCACTCCCAAAATTTACC ATTACAGAT
<i>SLC1A 1</i>	Solute Carrier Family 1 Member 1	ENSGALG00000010187	CATTAAACCTGGAGTGCCT CAAA	GATCCAGCATGGCATCAA CA
<i>SLC1A 4</i>	Solute Carrier Family 1 Member 4	ENSGALG00000008811	CGAACGTATGCGACAGATT ATAAGATAG	GTACCAACAGGGATCTTTT CCAA
<i>SLC2A 2</i>	Solute Carrier Family 2 Member 2	ENSGALG00000009306	GAGGAGGCCAAAAAGAGT TTG	ACTCTCTTTTCACTCGCAG CTTCT
<i>SLC34 A2</i>	Solute Carrier Family 34 Member 2	ENSGALG00000014372	AGAAGGAGAAAAATCACAA AGGCA	TCAACGCTATTGTGGAAA ATGC

<i>SLC3A1</i>	Solute Carrier Family 3 Member 1	ENSGALG00000009973	CTAGAAGCCACACATCTAC GAGATGA	ATAGGCTGTGATGCTCTCA GGAT
<i>SLC5A1</i>	Solute Carrier Family 5 Member 1	ENSGALG00000006728	GGCAGTGGGAGTATGGGCT AT	GCTCCGTCAGCCAGAAA G
<i>SLC7A7</i>	Solute Carrier Family 7 Member 7	ENSGALG00000034806	GCAAACTTGTGGCCCTTG T	CTCTGAGGTTTTCTGTTTC TCCTTTA
<i>VDR</i>	Vitamin D Receptor	ENSGALG00000033090	CTGCAAAATCACCAAGGAC AAC	CCTCGTCCGTCAGGATGA AC
<i>GPX7</i>	Glutathione Peroxidase 7	ENSGALG00000010633	GGTGCCTCCTTTCCTATGTT CA	GTTGGTTCTTCTCCAGTAG AATCAA
<i>HIF1A</i>	Hypoxia Inducible Factor 1 Subunit Alpha	ENSGALG00000011870	CAC TTTTTCAGGCAGTTGG AATTG	TTTTGCACGCCTTTACACG TT
<i>HMOX2</i>	Heme Oxygenase 2	ENSGALG00000007638	TCCAGTCCACGATGGGAAA	GCATTGCCTGCTAGCTTGT CT
<i>SOD1</i>	Superoxide Dismutase 1	ENSGALG00000015844	CCGCTTGTCTGATGGAGA T	CTGCGCTGGTACACCCATT T
<i>XDH</i>	Xanthine Dehydrogenase	ENSGALG00000008701	GAAGCCATTCCATTACTTC AGTTATG	AATGTCTGTGCGGATGTTTC TTG
<i>LBR</i>	Lamin B Receptor	ENSGALG00000009305	CAGCAGATCCCAAATTGTC CTATC	CTGTGACAAGAAGCCCTTT TCC
<i>NDUFA</i>	NADH: Ubiquinone Oxidoreductase Subunit A1	ENSGALG00000008613	TGTGCAGAACTACAGGAC AAACTG	AGGGAAAGCTCATTTTCA GCCT
<i>YWHAZ</i>	Tyrosine 3-Monooxygenase/Tryptophan 5-Monooxygenase Activation Protein Zeta	ENSGALG00000031387	GCAAGCAGAAAGCAAAGT TTTCT	TGTGATTGCTCCACAATCC CT

Supplementary Figure 1. Oocyst counting in the excreta of chickens challenged with *Eimeria*

