**Additional file**

**Additional file 1: Table S1.** Data quality control summary

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Sample Name** | **Group Name (biological replicates)** | **Raw reads** | **Clean Reads** | **Clean bases (data size)** | **Error rate (%)** | **Q20(%)** | **Q30(%)** | **GC Content(%)** |
| rGC11 | Control | 125083126 | 120380388 | 18.06G | 0.02 | 96.51 | 91.62 | 48.32 |
| rGC12 | 121204928 | 116206764 | 17.43G | 0.02 | 96.5 | 91.34 | 49.91 |
| rGC13 | 123462742 | 118337220 | 17.75G | 0.02 | 96.44 | 91.2 | 48.95 |
| rGC31 | EM | 125140096 | 119896822 | 17.98G | 0.02 | 96.59 | 91.55 | 49.22 |
| rGC32 | 132748386 | 126306378 | 18.94G | 0.02 | 95.63 | 89.68 | 49.44 |
| rGC33 | 114987538 | 110026050 | 16.5G | 0.02 | 96.39 | 91.19 | 49.2 |

**Additional file 1: Table S2.** The number of genes with different expression levels in *Gallus gallus*

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **FPKM Interval** | **Naïve Control (N)** | | | ***Eimeria maxima* infected (EM)** | | |
| **rGC11** | **rGC12** | **rGC13** | **rGC31** | **rGC32** | **rGC33** |
| 0~1 | 9729(39.39%) | 11180(45.26%) | 11428(46.27%) | 11468(46.43%) | 11398(46.15%) | 11597(46.95%) |
| 1~3 | 4144(16.78%) | 2999(12.14%) | 2570(10.40%) | 2771(11.22%) | 2588(10.48%) | 2682(10.86%) |
| 3~15 | 5861(23.73%) | 5822(23.57%) | 5550(22.47%) | 5389(21.82%) | 5536(22.41%) | 5412(21.91%) |
| 15~60 | 3815(15.45%) | 3635(14.72%) | 4021(16.28%) | 3900(15.79%) | 4016(16.26%) | 3882(15.72%) |
| >60 | 1151(4.66%) | 1064(4.31%) | 1131(4.58%) | 1172(4.74%) | 1162(4.70%) | 1127(4.56%) |

**Additional file 1: Table S3.** List of significantly upregulated genes in chicken cecal mucosa in response to *E. maxima* infection

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Gene\_ID** | **Chromosome** | **Strand** | **Fold changes** | **Adj p value** | **Description** |
| ABCA2 | 17 | - | 1.68 | 5.62E-03 | ABCA2\_HUMAN ATP-binding cassette sub-family A member 2 |
| ABCA9 | 18 | - | 1.55 | 6.56E-03 | ABCA6\_HUMAN ATP-binding cassette sub-family A member 6 |
| ABTB2 | 5 | - | 1.66 | 8.92E-03 | ABTB2\_HUMAN Ankyrin repeat and BTB/POZ domain-containing protein 2 |
| ACP5 | 30 | - | 1.81 | 5.80E-04 | PPA5\_MOUSE Tartrate-resistant acid phosphatase type 5 |
| ASAP3 | 23 | - | 1.61 | 9.00E-07 | ASAP3\_HUMAN Arf-GAP with SH3 domain, ANK repeat and PH domain-containing protein 3 |
| ATG9B | 2 | + | 1.68 | 1.35E-02 | ATG9A\_HUMAN Autophagy-related protein 9A |
| BF2 | 16 | - | 1.91 | 8.43E-05 | HA1F\_CHICK Class I histocompatibility antigen, F10 alpha chain |
| BLB2 | 16 | + | 1.66 | 1.09E-02 | HB2L\_CHICK Class II histocompatibility antigen, B-L beta chain (Fragment) |
| BTBD6 | 5 | + | 1.55 | 3.98E-02 | BTBD6\_XENLA BTB/POZ domain-containing protein 6 |
| BTN3A3 | 31 | + | 1.80 | 1.24E-02 | BT2A1\_HUMAN Butyrophilin subfamily 2 member A1 |
| C26H1orf106 | 26 | - | 1.68 | 6.13E-03 | INAVA\_HUMAN Innate immunity activator protein |
| CAD | 3 | + | 1.62 | 3.19E-03 | PYR1\_HUMAN CAD protein |
| CBX7 | 1 | + | 1.51 | 3.20E-03 | CBX7\_HUMAN Chromobox protein homolog 7 |
| CCDC130 | 30 | - | 1.61 | 2.99E-02 | CC130\_BOVIN Coiled-coil domain-containing protein 130 |
| CCL26 | 19 | + | 1.74 | 2.48E-03 | CCL3\_PANTR C-C motif chemokine 3 |
| CDH3 | 11 | + | 1.55 | 1.81E-05 | CADHK\_CHICK B-cadherin (Fragment) |
| CDKN1A | 26 | + | 1.64 | 1.73E-02 | CDN1A\_MOUSE Cyclin-dependent kinase inhibitor 1 |
| CLCNKB | 21 | + | 1.64 | 3.87E-03 | CLCKB\_XENLA Chloride channel protein ClC-Kb |
| CNGA4 | 1 | + | 1.72 | 4.59E-02 | CNGA4\_MOUSE Cyclic nucleotide-gated cation channel alpha-4 |
| CPT1A | 5 | - | 1.81 | 2.72E-05 | CPT1A\_HORSE Carnitine O-palmitoyltransferase 1, liver isoform |
| CTSS | 25 | - | 1.56 | 5.69E-05 | CATS\_SAIBB Cathepsin S |
| CYP2C45 | 6 | + | 1.67 | 3.18E-03 | CP2C9\_HUMAN Cytochrome P450 2C9 |
| CYR61 | 8 | - | 1.65 | 3.82E-02 | CYR61\_CHICK Protein CYR61 |
| DALRD3 | 12 | + | 1.55 | 4.51E-03 | DALD3\_MOUSE DALR anticodon-binding domain-containing protein 3 |
| DNASE2B | 8 | - | 1.62 | 1.47E-02 | DNS2B\_HUMAN Deoxyribonuclease-2-beta |
| EGR1 | 13 | + | 1.67 | 2.57E-02 | EGR1\_MOUSE Early growth response protein 1 |
| ERBB2 | 27 | + | 1.54 | 7.05E-04 | ERBB2\_HUMAN Receptor tyrine-protein kinase erbB-2 |
| FAM155B | 4 | + | 1.51 | 1.63E-02 | F155B\_XENTR Transmembrane protein FAM155B |
| FAM222B | 19 | - | 1.53 | 1.84E-02 | F222B\_HUMAN Protein FAM222B |
| FES | 10 | - | 1.54 | 1.81E-02 | FPS\_FUJSV Tyrine-protein kinase transforming protein Fps |
| FRMD8 | 33 | + | 1.68 | 1.09E-02 | FRMD8\_XENTR FERM domain-containing protein 8 |
| GAAGSD | 14 | - | 1.51 | 1.76E-02 | LYAG\_MOUSE Lysosomal alpha-glucosidase |
| GGCX | 22 | + | 1.52 | 2.38E-02 | VKGC\_SHEEP Vitamin K-dependent gamma-carboxylase |
| GIMAP1 | 2 | + | 1.62 | 1.94E-03 | GIMA2\_HUMAN GTPase IMAP family member 2 |
| GNLY | 22 | - | 1.60 | 3.95E-03 | NK-lysin |
| GPRC5A | 1 | + | 1.69 | 4.08E-03 | RAI3\_HUMAN Retinoic acid-induced protein 3 |
| GPX4 | 28 | + | 1.60 | 6.73E-03 | GPX4\_PIG Phospholipid hydroperoxide glutathione peroxidase |
| GRIN3B | 28 | + | 2.20 | 9.70E-06 | NMD3B\_RAT Glutamate receptor ionotropic, NMDA 3B |
| GVINP1 | 3 | - | 1.81 | 5.07E-03 | GVIN1\_HUMAN Interferon-induced very large GTPase 1 |
| GZMA | Z | + | 2.04 | 2.84E-04 | GRAA\_BOVIN Granzyme A |
| HLA-F10AL4 | NW\_020109758.1 | - | 5.32 | 5.26E-24 | HA1F\_CHICK Class I histocompatibility antigen, F10 alpha chain |
| HTRA1 | 6 | + | 1.55 | 1.21E-02 | HTRA1\_BOVIN Serine protease HTRA1 |
| IRF8 | 11 | - | 1.52 | 6.66E-03 | IRF8\_CHICK Interferon regulatory factor 8 |
| ITGB6 | 7 | + | 1.62 | 3.95E-03 | ITB6\_BOVIN Integrin beta-6 |
| JADE2 | 13 | - | 1.53 | 6.45E-03 | JADE2\_MOUSE E3 ubiquitin-protein ligase Jade-2 |
| KBTBD11 | 3 | - | 1.65 | 2.37E-02 | KBTBB\_MOUSE Kelch repeat and BTB domain-containing protein 11 |
| LIPA | 6 | - | 1.67 | 6.69E-04 | LICH\_CROAD Putative lysosomal acid lipase/cholesteryl ester hydrolase |
| LOC100858737 | 26 | + | 1.62 | 1.93E-02 | SIM29\_HUMAN Small integral membrane protein 29 |
| LOC100859837 | 1 | - | 1.79 | 2.07E-05 | SC6A7\_MOUSE Sodium-dependent proline transporter |
| LOC101747455 | 18 | - | 3.71 | 2.09E-22 | POL\_MMTVB Gag-Pro-Pol polyprotein |
| LOC107049129 | 5 | + | 1.75 | 9.84E-03 | C163A\_CANLF Scavenger receptor cysteine-rich type 1 protein M130 |
| LOC107049500 | 23 | + | 1.93 | 1.04E-02 | PEX19\_CRIGR Peroxisomal biogenesis factor 19 |
| LOC107050443 | 30 | + | 1.50 | 5.43E-03 | CTL2\_MOUSE Choline transporter-like protein 2 |
| LOC107053113 | 3 | - | 1.59 | 4.01E-02 |  |
| LOC107053944 | 8 | + | 1.89 | 6.94E-03 |  |
| LOC107054704 | NW\_020109758.1 | - | 5.60 | 6.31E-26 | HA1F\_CHICK Class I histocompatibility antigen, F10 alpha chain |
| LOC107055478 | 31 | + | 1.75 | 3.13E-02 | BT2A1\_HUMAN Butyrophilin subfamily 2 member A1 |
| LOC112529954 | 16 | - | 4.46 | 7.00E-16 | HA1F\_CHICK Class I histocompatibility antigen, F10 alpha chain |
| LOC112529978 | 17 | + | 1.72 | 8.24E-03 | TPRN\_RAT Taperin |
| LOC112530970 | 30 | - | 1.77 | 2.80E-02 |  |
| LOC112530987 | 30 | + | 1.89 | 6.94E-03 | PAR10\_HUMAN Poly [ADP-ribe] polymerase 10 |
| LOC417013 | 15 | + | 1.53 | 1.69E-02 | ACD11\_CAEEL Acyl-CoA dehydrogenase family member 11 |
| LOC417056 | NW\_020109758.1 | - | 1.61 | 3.20E-02 | HA1F\_CHICK Class I histocompatibility antigen, F10 alpha chain |
| LOC425607 | NW\_020110167.1 | + | 1.51 | 6.94E-03 | GT251\_BOVIN Procollagen galactyltransferase 1 |
| LOC776275 | 5 | - | 1.56 | 4.03E-02 | T263B\_XENLA Transmembrane protein 263-B |
| LRFN1 | 32 | - | 1.64 | 1.14E-02 | LRFN1\_HUMAN Leucine-rich repeat and fibronectin type III domain-containing protein 1 |
| LY96 | 2 | + | 1.67 | 3.10E-02 | LY96\_HUMAN Lymphocyte antigen 96 |
| MCOLN1 | 30 | - | 1.56 | 4.56E-03 | MCLN1\_MOUSE Mucolipin-1 |
| MGAT5B | 18 | - | 2.45 | 1.38E-07 | MGT5B\_HUMAN Alpha-1,6-mannylglycoprotein 6-beta-N-acetylglucaminyltransferase B |
| MHCIY | 16 | - | 2.27 | 6.86E-06 | HA1F\_CHICK Class I histocompatibility antigen, F10 alpha chain |
| MKNK2 | 28 | + | 1.61 | 3.35E-03 | MKNK2\_RAT MAP kinase-interacting serine/threonine-protein kinase 2 |
| MST1 | 12 | + | 1.76 | 4.51E-03 | HGFL\_HUMAN Hepatocyte growth factor-like protein |
| MTMR11 | 25 | + | 1.57 | 6.69E-04 | MTMRB\_HUMAN Myotubularin-related protein 11 |
| NDRG1 | 2 | - | 1.63 | 1.12E-05 | NDRG1\_MACFA Protein NDRG1 |
| NEURL1B | 13 | - | 1.61 | 1.10E-03 | NEU1B\_HUMAN E3 ubiquitin-protein ligase NEURL1B |
| NIPAL2 | 2 | - | 1.74 | 7.43E-04 | NPAL2\_MOUSE NIPA-like protein 2 |
| NOB1 | 11 | - | 1.50 | 3.20E-02 | NOB1\_MACFA RNA-binding protein NOB1 |
| Novel00272 | 11 | + | 1.77 | 1.83E-03 |  |
| Novel00358 | 23 | + | 1.69 | 4.81E-02 |  |
| Novel00363 | 23 | - | 1.57 | 6.45E-03 |  |
| NPAS2 | 1 | + | 1.81 | 3.41E-05 | NPAS2\_CHICK Neuronal PAS domain-containing protein 2 |
| OLFML2A | 17 | + | 1.59 | 3.42E-03 | OLM2A\_XENTR Olfactomedin-like protein 2A |
| PDCD1LG2 | Z | + | 1.66 | 1.21E-02 | PD1L1\_MOUSE Programmed cell death 1 ligand 1 |
| PDKI2 | 27 | - | 1.61 | 2.15E-02 | PDK2\_MOUSE [Pyruvate dehydrogenase (acetyl-transferring)] kinase isozyme 2, mitochondrial |
| PPP1R1B | 27 | + | 1.69 | 1.40E-03 | PPR1B\_BOVIN Protein phosphatase 1 regulatory subunit 1B |
| PROM1L | 6 | + | 1.52 | 1.27E-04 | PRM1A\_DANRE Prominin-1-A |
| RALGDS | 17 | - | 1.50 | 1.43E-02 | GNDS\_MOUSE Ral guanine nucleotide dissociation stimulator |
| RAPGEFL1 | 27 | + | 1.52 | 1.18E-02 | RPGFL\_HUMAN Rap guanine nucleotide exchange factor-like 1 |
| RHOB | 3 | + | 1.78 | 1.77E-03 | RHOB\_RAT Rho-related GTP-binding protein RhoB |
| RHPN1 | 2 | + | 1.55 | 1.09E-02 | RHPN1\_HUMAN Rhophilin-1 |
| rna63493 | NC\_001323.1 | - | 1.85 | 8.51E-05 | COX1\_GADMO Cytochrome c oxidase subunit 1 |
| RPL22L1 | 9 | + | 1.51 | 1.76E-02 | RL22L\_MOUSE 60S ribosomal protein L22-like 1 |
| RSFR | 6 | - | 1.60 | 2.59E-03 | RSFR\_CHICK Ribonuclease homolog |
| RYBP | 12 | - | 1.58 | 4.07E-02 | RYBP\_HUMAN RING1 and YY1-binding protein |
| SAMHD1 | 20 | - | 1.78 | 7.80E-06 | SAMH1\_CHICK Deoxynucleoside triphosphate triphosphohydrolase SAMHD1 |
| SEMA3BL | 12 | + | 1.90 | 5.60E-07 | SEM3B\_HUMAN Semaphorin-3B |
| SERPING1 | 5 | - | 1.57 | 8.36E-03 | IC1\_HUMAN Plasma protease C1 inhibitor |
| SHROOM1 | 13 | - | 1.58 | 2.36E-02 | SHRM1\_XENLA Protein Shroom1 |
| SHROOM2 | 1 | - | 1.50 | 3.15E-02 | SHRM2\_XENTR Protein Shroom2 |
| SLC22A5 | 13 | + | 1.77 | 3.24E-11 | S22A5\_HUMAN Solute carrier family 22 member 5 |
| SLC25A42 | 28 | - | 1.62 | 8.58E-03 | S2542\_XENTR Mitochondrial coenzyme A transporter SLC25A42 |
| SLC26A4 | 1 | + | 1.57 | 1.73E-02 | S26A4\_HUMAN Pendrin |
| SLC39A14 | 22 | - | 1.51 | 9.36E-03 | S39AE\_HUMAN Zinc transporter ZIP14 |
| SMIM24 | 28 | + | 1.73 | 4.28E-02 |  |
| SOCS3 | 18 | + | 1.88 | 1.40E-03 | SOCS3\_CHICK Suppressor of cytokine signaling 3 |
| SOX9 | 18 | + | 1.53 | 4.76E-02 | SOX9\_CHICK Transcription factor SOX-9 |
| SP1 | 33 | + | 1.59 | 5.93E-04 | SP1\_HUMAN Transcription factor Sp1 |
| SPHK1 | 18 | - | 1.50 | 7.63E-03 | SPHK1\_MOUSE Sphingosine kinase 1 |
| SRCIN1 | 27 | - | 1.65 | 4.14E-03 | SRCN1\_RAT SRC kinase signaling inhibitor 1 |
| TAP1 | 16 | - | 1.59 | 6.69E-04 | TAP1\_GORGO Antigen peptide transporter 1 |
| TAPBP | 16 | - | 1.56 | 2.36E-04 | TPSN\_CHICK Tapasin |
| TC2N | 5 | - | 1.57 | 6.93E-03 | TAC2N\_HUMAN Tandem C2 domains nuclear protein |
| TCEA3 | 23 | - | 1.64 | 2.49E-03 | TCEA3\_HUMAN Transcription elongation factor A protein 3 |
| TMC5 | 14 | + | 1.56 | 3.20E-03 | TMC5\_RAT Transmembrane channel-like protein 5 |
| TMEM140 | 1 | - | 1.63 | 6.73E-03 | TM140\_HUMAN Transmembrane protein 140 |
| TMEM82 | 21 | + | 1.51 | 7.31E-03 | TMM82\_XENLA Transmembrane protein 82 |
| TNFRSF10B | 22 | + | 1.61 | 1.45E-02 | TR10B\_HUMAN Tumor necrosis factor receptor superfamily member 10B |
| TNFSF10 | 9 | + | 1.50 | 6.66E-03 | TNF10\_HUMAN Tumor necrosis factor ligand superfamily member 10 |
| TPP1 | 1 | - | 1.57 | 8.40E-05 | TPP1\_MACFA Tripeptidyl-peptidase 1 |
| TRAF4 | 19 | + | 1.69 | 2.62E-03 | TRAF4\_MOUSE TNF receptor-associated factor 4 |
| TRAIL-LIKE | 4 | - | 1.65 | 7.34E-04 | TNF10\_MOUSE Tumor necrosis factor ligand superfamily member 10 |
| TRNP1 | 23 | + | 1.83 | 3.81E-03 |  |
| VNN1 | 3 | + | 1.59 | 3.29E-03 | VNN1\_BOVIN Pantetheinase |
| VSIG4 | 4 | - | 1.71 | 4.91E-03 | VSIG4\_HUMAN V-set and immunoglobulin domain-containing protein 4 |

\* The ratio of Fragments Per Kilobase of transcript per Million mapped reads (fpkm) in EM group to that in N group (Fold changes ≥ 1.5, adjusted *p* ≤ 0.05).

**Additional file 1: Table S4.** List of significantly downregulated genes in chicken cecal mucosa in response to *E. maxima* infection

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Gene\_ID** | **Chromosome** | **Strand** | **Fold changes** | **Adj p value** | **Description** |
| ACAN | 10 | - | -2.03 | 0.0045148 | PGCA\_CHICK Aggrecan core protein |
| ACE2 | 1 | + | -2.60 | 2.08E-05 | ACE2\_FELCA Angiotensin-converting enzyme 2 |
| ACTG2 | 22 | + | -1.55 | 0.027218 | ACTH\_RAT Actin, gamma-enteric smooth muscle |
| ADAMTS6 | Z | - | -1.58 | 0.012073 | ATS6\_HUMAN A disintegrin and metalloproteinase with thrombospondin motifs 6 |
| ADGRB3 | 3 | - | -1.65 | 0.043446 | AGRB3\_HUMAN Adhesion G protein-coupled receptor B3 |
| AFF3 | 1 | - | -1.71 | 0.0025321 | AFF3\_HUMAN AF4/FMR2 family member 3 |
| AGBL1 | 10 | - | -1.92 | 0.010906 | CBPC4\_HUMAN Cytosolic carboxypeptidase 4 |
| AMY2A | 8 | - | -1.87 | 0.014749 | AMYP\_STRCA Pancreatic alpha-amylase |
| ANLN | 2 | - | -2.00 | 4.04E-07 | ANLN\_HUMAN Anillin |
| AOX1 | 7 | + | -1.69 | 0.015721 | AOXA\_HUMAN Aldehyde oxidase |
| AOX2 | 7 | + | -2.00 | 0.0017691 | AOXB\_MOUSE Aldehyde oxidase 2 |
| APOB | 3 | - | -3.10 | 1.63E-08 | APOB\_HUMAN Apolipoprotein B-100 |
| ATP2B1 | 1 | - | -1.61 | 6.67E-07 | AT2B1\_MOUSE Plasma membrane calcium-transporting ATPase 1 |
| BBOX1 | 5 | + | -1.77 | 0.031319 | BODG\_MOUSE Gamma-butyrobetaine dioxygenase |
| BIRC5 | 3 | - | -1.74 | 0.0079491 | BIRC5\_BOVIN Baculoviral IAP repeat-containing protein 5 |
| BORL4 | 19 | - | -1.58 | 0.01284 | BORE1\_CHICK Borealin |
| BPNT1 | 3 | + | -1.53 | 0.0007338 | BPNT1\_BOVIN 3&ap;(2&ap;),5&ap;-bisphosssssssssssphate nucleotidase 1 |
| BT2A1L | 31 | + | -1.72 | 0.030986 | BT2A1\_HUMAN Butyrophilin subfamily 2 member A1 |
| BUB1B | 5 | + | -1.65 | 0.011894 | BUB1B\_HUMAN Mitotic checkpoint serine/threonine-protein kinase BUB1 beta |
| C9ORF152 | 2 | + | -1.71 | 0.049206 | CI152\_HUMAN Uncharacterized protein C9orf152 |
| CACNA1C | 1 | + | -1.58 | 0.0085722 | CAC1C\_HUMAN Voltage-dependent L-type calcium channel subunit alpha-1C |
| CACNA1I | 1 | - | -1.78 | 0.023743 | CAC1I\_HUMAN Voltage-dependent T-type calcium channel subunit alpha-1I |
| CACNA2D4 | 1 | - | -1.77 | 0.016855 | CA2D4\_HUMAN Voltage-dependent calcium channel subunit alpha-2/delta-4 |
| CALB1 | 2 | - | -3.25 | 1.92E-09 | CALB1\_CHICK Calbindin |
| CAPN14 | 3 | + | -1.86 | 0.010775 | CAN14\_HUMAN Calpain-14 |
| CAV1 | 1 | - | -1.58 | 0.035787 | CAV1\_CHICK Caveolin-1 |
| CCDC170 | 3 | + | -1.72 | 0.045467 | CC170\_HUMAN Coiled-coil domain-containing protein 170 |
| CCDC173 | 7 | + | -1.56 | 0.049561 | CC173\_HUMAN Coiled-coil domain-containing protein 173 |
| CCNB2 | 10 | - | -1.74 | 0.0010961 | CCNB2\_CHICK G2/mitotic-specific cyclin-B2 |
| CDC45 | 15 | + | -1.74 | 0.003947 | CDC45\_HUMAN Cell division control protein 45 homolog |
| CDK1 | 6 | - | -1.54 | 0.038747 | CDK1\_CHICK Cyclin-dependent kinase 1 |
| CELSR1 | 1 | - | -1.72 | 0.039621 | CELR1\_MOUSE Cadherin EGF LAG seven-pass G-type receptor 1 |
| CENPE | 4 | - | -1.93 | 2.18E-05 | CENPE\_HUMAN Centromere-associated protein E |
| CENPF | 3 | - | -1.88 | 2.35E-05 | CENPF\_HUMAN Centromere protein F |
| CENPK | Z | - | -1.61 | 0.043446 | CENPK\_CHICK Centromere protein K |
| CENPW | 3 | - | -1.94 | 0.0057137 | CENPW\_CHICK Centromere protein W |
| CKAP2 | 1 | - | -1.54 | 0.014334 | CKAP2\_HUMAN Cytoskeleton-associated protein 2 |
| COL1A1 | 27 | + | -1.66 | 0.014494 | CO1A1\_CHICK Collagen alpha-1(I) chain |
| COL3A1 | 7 | - | -1.50 | 0.039146 | CO3A1\_CHICK Collagen alpha-1(III) chain (Fragments) |
| COL8A2 | 23 | + | -1.51 | 0.042671 | CO8A2\_HUMAN Collagen alpha-2(VIII) chain |
| COX7A2 | 3 | + | -1.52 | 3.63E-05 | CX7A2\_RAT Cytochrome c oxidase subunit 7A2, mitochondrial |
| CRTAC1 | 6 | + | -1.75 | 0.034856 | CRAC1\_HUMAN Cartilage acidic protein 1 |
| CSMD1 | 3 | + | -1.82 | 0.018027 | CSMD1\_HUMAN CUB and sushi domain-containing protein 1 |
| CUBN | 2 | + | -1.85 | 0.016953 | CUBN\_CANLF Cubilin |
| CYCS | 2 | - | -1.50 | 0.004106 | CYC\_MELGA Cytochrome c |
| CYP2C23a | 6 | - | -2.80 | 7.09E-10 | CP2H1\_CHICK Cytochrome P450 2H1 |
| CYP2C23b | 6 | - | -2.81 | 7.42E-07 | CP2H2\_CHICK Cytochrome P450 2H2 |
| DIAPH3 | 1 | + | -1.63 | 0.022514 | DIAP3\_HUMAN Protein diaphanous homolog 3 |
| DLG2 | 1 | - | -1.76 | 0.0125 | DLG2\_HUMAN Disks large homolog 2 |
| DNAH1 | 12 | + | -1.74 | 0.02114 | DYH1\_HUMAN Dynein heavy chain 1, axonemal |
| DNAH7 | 7 | - | -1.70 | 0.039278 | DYH7\_HUMAN Dynein heavy chain 7, axonemal |
| DNAH8 | 3 | - | -1.69 | 0.039146 | DYH8\_MOUSE Dynein heavy chain 8, axonemal |
| DNAJA3 | 14 | + | -1.55 | 0.014349 | DNJA3\_HUMAN DnaJ homolog subfamily A member 3, mitochondrial |
| DPP10 | 7 | - | -1.81 | 0.021608 | DPP10\_HUMAN Inactive dipeptidyl peptidase 10 |
| EPHA7 | 3 | + | -1.72 | 0.037002 | EPHA7\_CHICK Ephrin type-A receptor 7 |
| ETNPPL | 4 | + | -1.79 | 0.027407 | AT2L1\_XENLA Ethanolamine-phosphate phosphor-lyase |
| FABP2 | 4 | + | -3.73 | 7.00E-16 | FABPI\_MOUSE Fatty acid-binding protein, intestinal |
| FANCD2 | 12 | - | -1.68 | 0.014488 | FACD2\_HUMAN Fanconi anemia group D2 protein |
| FBN2 | Z | - | -2.16 | 0.0013384 | FBN2\_HUMAN Fibrillin-2 |
| FER1L4 | 20 | + | -2.18 | 0.0012542 | FR1L4\_MOUSE Fer-1-like protein 4 |
| FHL5 | 3 | - | -1.50 | 0.0125 | FHL5\_BOVIN Four and a half LIM domains protein 5 |
| FIBIN | 5 | + | -1.67 | 0.029086 | FIBIN\_BOVIN Fin bud initiation factor homolog |
| FREM1 | Z | - | -1.59 | 0.023626 | FREM1\_HUMAN FRAS1-related extracellular matrix protein 1 |
| FTCD | 7 | - | -1.68 | 6.15E-06 | FTCD\_CHICK Formimidoyltransferase-cyclodeaminase |
| GABRP | 13 | - | -1.76 | 0.02754 | GBRP\_HUMAN Gamma-aminobutyric acid receptor subunit pi |
| GABRR1 | 3 | + | -1.71 | 0.021474 | GBRR1\_RAT Gamma-aminobutyric acid receptor subunit rho-1 |
| GJA8 | 1 | + | -1.96 | 0.0069439 | CXA8\_CHICK Gap junction alpha-8 protein |
| GNAO1 | 11 | + | -1.64 | 0.038998 | GNAO\_XENLA Guanine nucleotide-binding protein G(o) subunit alpha |
| GPC6 | 1 | - | -1.67 | 0.042671 | GPC6\_HUMAN Glypican-6 |
| GRHL3 | 23 | + | -2.75 | 1.37E-07 | GRHL3\_MOUSE Grainyhead-like protein 3 homolog |
| GRIA4 | 1 | - | -1.77 | 0.019007 | GRIA4\_RAT Glutamate receptor 4 |
| GRIN2C | 18 | - | -1.68 | 0.043446 | NMDE3\_MOUSE Glutamate receptor ionotropic, NMDA 2C |
| GSTA2 | 3 | + | -1.68 | 0.0043431 | GSTA2\_CHICK Glutathione S-transferase |
| GSTA3 | 3 | + | -1.69 | 0.0039224 | GSTA1\_CHICK Glutathione S-transferase |
| GSTO1 | 6 | + | -1.93 | 0.0006757 | GSTO1\_HUMAN Glutathione S-transferase omega-1 |
| HDAC9 | 2 | + | -1.54 | 0.043552 | HDAC9\_HUMAN Histone deacetylase 9 |
| HGFAC | 4 | - | -1.64 | 0.024157 | HGFA\_MOUSE Hepatocyte growth factor activator |
| HIST1H110 | 1 | - | -1.51 | 0.0085917 | H110\_CHICK Histone H1.10 |
| HIST1H2A4L3 | 1 | - | -2.83 | 1.37E-07 | H2A\_CAIMO Histone H2A |
| HIST1H2B8 | 1 | + | -1.60 | 0.011988 | H2B2E\_PONAB Histone H2B type 2-E |
| HISTH2A4L1 | 1 | - | -1.66 | 0.0003416 | H2AJ\_HUMAN Histone H2A.J |
| HMMR | 13 | - | -1.71 | 0.0079491 | HMMR\_HUMAN Hyaluronan mediated motility receptor |
| HS6ST3 | 1 | - | -1.87 | 0.016783 | H6ST3\_MOUSE Heparan-sulfate 6-O-sulfotransferase 3 |
| HSPA2 | 5 | - | -1.50 | 0.0021141 | HSP70\_CHICK Heat shock 70 kDa protein |
| HSPA5 | 17 | - | -1.60 | 0.0023992 | BIP\_CHICK Endoplasmic reticulum chaperone BiP |
| KCNE1 | 1 | - | -2.96 | 7.97E-15 | KCNE1\_HUMAN Potassium voltage-gated channel subfamily E member 1 |
| KIAA1024 | 10 | - | -1.73 | 0.034663 | MNAR1\_HUMAN Major intrinsically disordered Notch2-binding receptor 1 |
| KIF11 | 6 | - | -1.55 | 0.007667 | KIF11\_XENTR Kinesin-like protein KIF11 |
| KIF14 | 8 | + | -1.66 | 0.0094865 | KIF14\_HUMAN Kinesin-like protein KIF14 |
| KLF9 | Z | - | -1.96 | 1.65E-05 | KLF9\_RAT Krueppel-like factor 9 |
| KPNA2 | 18 | - | -1.85 | 0.0001952 | IMA1\_HUMAN Importin subunit alpha-1 |
| LAMB4 | 1 | - | -1.70 | 0.049622 | LAMB4\_HUMAN Laminin subunit beta-4 |
| LBH | 3 | - | -1.60 | 0.0004295 | LBH\_CHICK Protein LBH |
| LINGO2 | Z | - | -1.61 | 0.013007 | LIGO2\_HUMAN Leucine-rich repeat and immunoglobulin-like domain-containing nogo receptor-interacting protein 2 |
| LOC100859246 | 3 | - | -1.80 | 0.020201 |  |
| LOC100859492 | 2 | + | -1.75 | 0.032962 |  |
| LOC101747340 | 9 | + | -1.87 | 0.0034167 |  |
| LOC101747448 | 9 | - | -1.89 | 0.014021 |  |
| LOC101747954 | 6 | - | -1.78 | 0.031964 |  |
| LOC101748427 | 12 | + | -1.69 | 0.033053 |  |
| LOC101748713 | 1 | - | -1.69 | 0.039278 |  |
| LOC101748799 | 7 | + | -1.79 | 0.021608 |  |
| LOC101748814 | 4 | + | -1.79 | 0.023626 |  |
| LOC101749216 | 13 | - | -1.74 | 0.039049 | ISK1\_STRCA Pancreatic secretory trypsin inhibitor |
| LOC101749453 | 5 | - | -1.60 | 0.040356 | FBX16\_HUMAN F-box only protein 16 |
| LOC101749477 | 9 | + | -1.84 | 0.020579 |  |
| LOC101749621 | 2 | + | -1.72 | 0.029127 |  |
| LOC101749691 | 2 | - | -1.68 | 0.032387 |  |
| LOC101749793 | 4 | + | -1.73 | 0.042476 |  |
| LOC101750098 | 6 | - | -1.84 | 0.016783 |  |
| LOC101750125 | 3 | + | -1.66 | 0.042671 |  |
| LOC101750386 | 14 | - | -1.72 | 0.040211 |  |
| LOC101750826 | 1 | + | -1.69 | 0.023626 |  |
| LOC101751305 | 31 | - | -1.69 | 0.025821 | sarcolemmal membrane-associated protein-like |
| LOC101751795 | 20 | + | -1.93 | 0.0090703 |  |
| LOC101752258 | 3 | - | -1.72 | 0.028768 |  |
| LOC107049364 | 1 | - | -1.83 | 0.021733 | RHG32\_MOUSE Rho GTPase-activating protein 32 |
| LOC107049551 | 1 | - | -1.87 | 0.012071 | MRO2B\_MOUSE Maestro heat-like repeat-containing protein family member 2B |
| LOC107051247 | 1 | + | -1.64 | 0.042366 |  |
| LOC107051649 | 2 | - | -1.61 | 0.048052 |  |
| LOC107051651 | 2 | - | -1.79 | 0.020417 |  |
| LOC107051926 | Z | + | -1.81 | 0.015817 |  |
| LOC107052089 | 4 | - | -2.06 | 0.0021551 |  |
| LOC107052435 | Z | + | -1.70 | 0.037297 |  |
| LOC107053395 | 5 | - | -1.74 | 0.024851 |  |
| LOC107053481 | 1 | + | -1.73 | 0.012073 |  |
| LOC107053554 | 5 | + | -1.69 | 0.034609 |  |
| LOC107053572 | 5 | + | -1.75 | 0.030559 |  |
| LOC107053701 | 1 | + | -1.86 | 0.01506 | G2E3\_MOUSE G2/M phase-specific E3 ubiquitin-protein ligase |
| LOC107053789 | 7 | + | -1.70 | 0.043724 |  |
| LOC107053801 | 7 | + | -1.83 | 0.021474 |  |
| LOC107053888 | 7 | - | -1.94 | 0.0076279 |  |
| LOC107053912 | 8 | + | -2.26 | 4.21E-06 |  |
| LOC107053913 | 8 | + | -1.81 | 1.72E-05 |  |
| LOC107053936 | 8 | - | -1.79 | 0.011417 |  |
| LOC107053990 | 8 | + | -1.75 | 0.02754 |  |
| LOC107054047 | 8 | + | -1.72 | 0.044776 |  |
| LOC107054130 | 9 | - | -2.04 | 0.003947 |  |
| LOC107054137 | 9 | - | -1.69 | 0.042286 |  |
| LOC107054158 | 10 | + | -1.81 | 0.025884 | KRF1\_COLLI Feather keratin C1-1/C1-3/C2-1 |
| LOC107054170 | 1 | + | -1.95 | 0.0066814 |  |
| LOC107054324 | 11 | - | -1.72 | 0.023626 |  |
| LOC107054551 | 13 | - | -1.64 | 0.044776 |  |
| LOC107054639 | 14 | + | -1.69 | 0.041647 |  |
| LOC107054644 | 1 | + | -1.84 | 0.010215 |  |
| LOC107054831 | 20 | + | -1.69 | 0.040802 |  |
| LOC107055306 | 1 | + | -1.63 | 0.023626 |  |
| LOC107055587 | 1 | + | -1.74 | 0.041136 | RBP2\_MOUSE E3 SUMO-protein ligase RanBP2 |
| LOC107055643 | 1 | + | -1.72 | 0.014533 | MRO2B\_MOUSE Maestro heat-like repeat-containing protein family member 2B |
| LOC107056422 | 5 | - | -1.72 | 0.019318 | IPIL1\_RAT Initol 1,4,5-trisphphate receptor-interacting protein-like 1 |
| LOC107056869 | Z | - | -1.75 | 0.019547 | G2/M phase-specific E3 ubiquitin-protein ligase-like |
| LOC107056924 | 1 | + | -1.89 | 0.0098382 | MRO2B\_MOUSE Maestro heat-like repeat-containing protein family member 2B |
| LOC107057081 | 1 | - | -1.76 | 0.031546 |  |
| LOC107057257 | NW\_020110167.1 | + | -1.82 | 0.023626 | ER1\_BOVIN Oxidative stress-responsive serine-rich protein 1 |
| LOC112530112 | 20 | - | -1.78 | 0.025794 |  |
| LOC112530221 | 23 | + | -1.79 | 0.0082674 |  |
| LOC112530274 | 24 | - | -1.73 | 0.040876 |  |
| LOC112530392 | 27 | + | -1.85 | 0.015309 |  |
| LOC112530523 | 1 | + | -1.96 | 0.0019367 |  |
| LOC112530580 | Z | - | -1.74 | 0.038747 |  |
| LOC112530621 | Z | - | -2.36 | 0.0002133 | ENV\_AVISU Envelope glycoprotein (Fragment) |
| LOC112531432 | NW\_020110165.1 | - | -1.79 | 0.023626 |  |
| LOC112531480 | NW\_020110167.1 | - | -1.80 | 0.025255 |  |
| LOC112531499 | 1 | + | -1.71 | 0.042174 | M1T\_DROMA Mariner M1 transpase |
| LOC112531773 | 2 | - | -1.56 | 0.025013 |  |
| LOC112531817 | 2 | - | -1.90 | 0.012352 |  |
| LOC112531860 | 2 | + | -1.88 | 0.01517 |  |
| LOC112531897 | 2 | + | -1.50 | 0.040653 |  |
| LOC112531906 | 2 | - | -2.43 | 8.50E-05 | GAG\_RSVP Gag polyprotein |
| LOC112532104 | 3 | + | -1.72 | 0.024613 |  |
| LOC112532320 | 4 | - | -1.86 | 0.0067991 |  |
| LOC112532346 | 4 | - | -1.74 | 0.01941 |  |
| LOC112532365 | 4 | - | -1.77 | 0.030859 |  |
| LOC112532395 | 4 | + | -1.80 | 0.012516 |  |
| LOC112532397 | 4 | + | -1.74 | 0.013933 |  |
| LOC112532422 | 4 | + | -1.74 | 0.041846 |  |
| LOC112532700 | 6 | + | -2.23 | 0.0008104 | DMBT1\_HUMAN Deleted in malignant brain tumors 1 protein |
| LOC112532749 | 1 | - | -1.59 | 0.040653 |  |
| LOC112532931 | 1 | - | -1.64 | 0.043724 |  |
| LOC112533025 | 9 | + | -2.03 | 0.0034185 |  |
| LOC112533490 | 1 | - | -1.65 | 0.046956 |  |
| LOC112533599 | 16 | + | -1.81 | 0.015901 | RRT15\_YEAST Regulator of rDNA transcription protein 15 |
| LOC112533601 | 16 | + | -3.98 | 3.98E-12 | NLRC3\_MOUSE Protein NLRC3 |
| LOC112533602 | 16 | + | -2.99 | 2.77E-07 |  |
| LOC112533603 | 16 | + | -1.65 | 0.025656 | NLRC3\_MOUSE Protein NLRC3 |
| LOC420807 | 2 | - | -1.66 | 0.020417 | TKRA\_BACSU Probable 2-ketogluconate reductase |
| LOC768995 | 4 | + | -1.71 | 0.043446 |  |
| LOR1 | 25 | + | -1.62 | 0.049604 |  |
| LOXL4 | 6 | + | -1.78 | 0.030986 | LOXL4\_BOVIN Lysyl oxidase homolog 4 |
| LRRC17 | 1 | + | -1.64 | 0.048271 | LRC17\_HUMAN Leucine-rich repeat-containing protein 17 |
| MAP1B | Z | - | -1.85 | 0.010906 | MAP1B\_RAT Microtubule-associated protein 1B |
| MCT2L | 12 | + | -2.76 | 3.18E-06 | MOT2\_HUMAN Monocarboxylate transporter 2 |
| ME3 | 1 | + | -1.69 | 0.045467 | MAON\_MOUSE NADP-dependent malic enzyme, mitochondrial |
| MFAP5 | 1 | - | -1.82 | 0.0065296 | MFAP5\_MOUSE Microfibrillar-associated protein 5 |
| MGAM | NW\_020110167.1 | - | -1.83 | 0.018222 | MGA\_HUMAN Maltase-glucoamylase, intestinal |
| MHCIA9 | 16 | + | -1.53 | 0.03975 | HA1F\_CHICK Class I histocompatibility antigen, F10 alpha chain |
| MKI67 | 6 | + | -1.56 | 0.0002191 | KI67\_HUMAN Proliferation marker protein Ki-67 |
| MRM2 | 14 | - | -2.01 | 0.0020348 | MRM2\_HUMAN rRNA methyltransferase 2, mitochondrial |
| MSMB | 6 | + | -1.73 | 0.043382 | MSPA\_SAGOE Beta-micreminoprotein A1 |
| MTFR2 | 3 | + | -1.66 | 0.038747 | MTFR2\_HUMAN Mitochondrial fission regulator 2 |
| MTTP | 4 | + | -1.86 | 0.014838 | MTP\_MESAU Microsomal triglyceride transfer protein large subunit |
| MYL1 | 7 | - | -1.95 | 0.0084917 | MLE1\_CHICK Myin light chain 1, skeletal muscle isoform |
| MYO3B | 7 | - | -1.79 | 0.027249 | MYO3B\_HUMAN Myin-IIIb |
| MYO7A | 1 | - | -1.70 | 0.045059 | MYO7A\_HUMAN Unconventional myin-VIIa |
| NCAPG2 | 2 | - | -1.71 | 0.0075317 | CNDG2\_XENLA Condensin-2 complex subunit G2 |
| NDC80 | 2 | - | -1.66 | 0.022362 | NDC80\_CHICK Kinetochore protein NDC80 homolog |
| NELL2 | 1 | - | -2.21 | 0.0005925 | NEL\_CHICK Protein NEL |
| NMRK2 | 28 | - | -1.55 | 0.041674 | NRK2\_HUMAN Nicotinamide ribide kinase 2 |
| NOP2 | 1 | - | -1.76 | 0.0049553 | NOP2\_HUMAN Probable 28S rRNA (cytine(4447)-C(5))-methyltransferase |
| Novel00040 | 1 | - | -1.72 | 0.044776 |  |
| Novel00049 | 1 | - | -2.15 | 0.0014506 |  |
| Novel00082 | 2 | + | -1.75 | 0.037238 | IPIL1\_MOUSE Initol 1,4,5-trisphphate receptor-interacting protein-like 1 |
| Novel00104 | 2 | - | -1.86 | 0.015525 | IPIL1\_RAT Initol 1,4,5-trisphphate receptor-interacting protein-like 1 |
| Novel00129 | 3 | - | -1.73 | 0.021608 | PLB1\_MONDO Phospholipase B1, membrane-associated |
| Novel00167 | 4 | - | -1.54 | 0.017684 |  |
| Novel00202 | 6 | - | -2.11 | 0.0022165 |  |
| Novel00225 | 8 | + | -2.26 | 0.0004792 |  |
| Novel00231 | 8 | + | -1.86 | 0.0084116 |  |
| Novel00243 | 8 | - | -1.93 | 0.0098844 |  |
| Novel00250 | 9 | + | -2.23 | 0.0008037 |  |
| Novel00269 | 10 | - | -1.63 | 0.03986 |  |
| Novel00271 | 11 | + | -1.86 | 0.01506 |  |
| Novel00282 | 12 | + | -1.95 | 0.0088188 |  |
| Novel00296 | 14 | + | -1.88 | 0.0075317 |  |
| Novel00301 | 14 | - | -2.34 | 0.000191 | NES, paranemin; nestin; K07609 nestin |
| Novel00303 | 14 | - | -2.06 | 0.0038711 |  |
| Novel00305 | 14 | - | -1.71 | 0.046541 |  |
| Novel00324 | 18 | + | -1.65 | 0.047378 |  |
| Novel00326 | 18 | + | -1.60 | 0.043357 |  |
| Novel00370 | 25 | + | -2.14 | 0.0016463 |  |
| Novel00373 | 25 | - | -2.39 | 3.82E-05 |  |
| Novel00384 | 27 | + | -1.93 | 0.0093626 |  |
| Novel00388 | 27 | + | -1.69 | 0.030837 |  |
| Novel00389 | 27 | + | -1.73 | 0.028836 |  |
| Novel00395 | 27 | + | -2.85 | 9.00E-07 |  |
| Novel00466 | 33 | + | -1.77 | 0.027249 |  |
| Novel00470 | 33 | + | -2.20 | 0.0003679 |  |
| Novel00494 | 31 | - | -1.73 | 0.038421 |  |
| Novel00506 | NW\_020109838.1 | + | -1.78 | 0.030476 |  |
| Novel00508 | NW\_020109883.1 | + | -2.45 | 3.41E-05 |  |
| Novel00515 | NW\_020110000.1 | + | -1.74 | 0.039858 |  |
| Novel00518 | NW\_020110058.1 | - | -1.78 | 0.028836 |  |
| Novel00519 | NW\_020110062.1 | + | -1.78 | 0.030859 |  |
| Novel00524 | NW\_020110136.1 | + | -1.61 | 0.034609 |  |
| Novel00530 | NW\_020110158.1 | + | -1.74 | 0.041647 |  |
| Novel00531 | NW\_020110158.1 | - | -1.90 | 0.01284 |  |
| Novel00537 | NW\_020110161.1 | + | -1.82 | 0.0089164 |  |
| Novel00539 | NW\_020110161.1 | - | -1.80 | 0.017797 |  |
| Novel00540 | NW\_020110161.1 | - | -2.26 | 0.0006403 |  |
| Novel00560 | NW\_020110165.1 | + | -2.06 | 0.0038711 |  |
| NREP | Z | + | -1.55 | 0.014628 | NREP\_CHICK Neuronal regeneration-related protein |
| NT5C1A | 23 | - | -1.74 | 0.032114 | 5NT1A\_MOUSE Cytolic 5&ap;-nucleotidase 1A |
| NUSAP1 | 5 | + | -1.55 | 0.010938 | NUSAP\_CHICK Nucleolar and spindle-associated protein 1 |
| NWD2 | 4 | - | -1.91 | 0.0030083 | NWD2\_HUMAN NACHT and WD repeat domain-containing protein 2 |
| OAT | 6 | - | -1.50 | 0.021474 | OAT\_BOVIN Ornithine aminotransferase, mitochondrial |
| OTOF | 3 | + | -1.96 | 0.0075317 | OTOF\_RAT Otoferlin |
| PI15 | 2 | + | -2.43 | 3.63E-05 | PI15\_CHICK Peptidase inhibitor 15 |
| PLA2G4EL2 | 5 | - | -1.83 | 0.017279 | PA24E\_HUMAN Cytolic phospholipase A2 epsilon |
| PLK1 | 14 | + | -1.59 | 0.030476 | PLK1\_MOUSE Serine/threonine-protein kinase PLK1 |
| PPL | 14 | - | -1.90 | 0.012851 | PEPL\_HUMAN Periplakin |
| PRG4 | 8 | - | -1.75 | 0.038505 | PRG4\_HUMAN Proteoglycan 4 |
| PRSS23 | 1 | - | -1.55 | 0.003975 | PRS23\_BOVIN Serine protease 23 |
| PTPN5 | 5 | - | -1.78 | 0.027249 | PTN5\_HUMAN Tyrine-protein phosphatase non-receptor type 5 |
| rna63480 | NC\_001323.1 | + | -2.12 | 0.0021551 |  |
| rna63481 | NC\_001323.1 | + | -3.72 | 6.48E-11 |  |
| rna63484 | NC\_001323.1 | + | -1.82 | 0.015817 |  |
| rna63487 | NC\_001323.1 | + | -1.72 | 0.034558 |  |
| rna63497 | NC\_001323.1 | + | -1.72 | 0.03202 |  |
| rna63498 | NC\_001323.1 | + | -1.86 | 0.016666 |  |
| rna63501 | NC\_001323.1 | + | -1.71 | 0.042366 |  |
| RRM2 | 3 | + | -1.81 | 0.0001386 | RIR2\_HUMAN Ribonucleoside-diphosphate reductase subunit M2 |
| RRP12 | 6 | + | -4.09 | 2.10E-17 | RRP12\_CHICK RRP12-like protein |
| RRP15 | 3 | - | -2.82 | 1.26E-06 | RRP15\_HUMAN RRP15-like protein |
| RRP1B | 1 | + | -8.04 | 4.86E-56 | RRP1B\_HUMAN ribosomal RNA processing protein 1 homolog B |
| RRP36 | 3 | + | -6.49 | 4.57E-34 | RRP36\_BOVIN ribosomal RNA processing protein 36 homolog |
| RRP7A | 1 | + | -4.57 | 2.05E-18 | RRP7A\_MOUSE ribosomal RNA-processing protein 7 homolog A |
| RRP9 | 12 | + | -2.52 | 4.26E-07 | U3IP2\_MOUSE U3 small nucleolar RNA-interacting protein 2 |
| RYR2 | 3 | - | -1.74 | 0.038747 | RYR2\_HUMAN Ryanodine receptor 2 |
| SCD | 6 | - | -2.31 | 4.78E-05 | ACOD\_CYPCA Acyl-CoA desaturase |
| SCUBE2 | 5 | + | -2.18 | 0.000186 | SCUB2\_HUMAN Signal peptide, CUB and EGF-like domain-containing protein 2 |
| SGCG | 1 | - | -1.62 | 0.041165 | SGCG\_CANLF Gamma-sarcoglycan |
| SHANK2 | 5 | - | -1.95 | 0.0083613 | SHAN2\_HUMAN SH3 and multiple ankyrin repeat domains protein 2 |
| SIIL | 1 | + | -1.72 | 0.025656 | SUIS\_RABIT Sucrase-isomaltase, intestinal |
| SLC15A1 | 1 | + | -1.79 | 0.022514 | S15A1\_MOUSE Solute carrier family 15 member 1 |
| SLC22A3 | 3 | - | -1.65 | 0.033723 | S22A3\_MOUSE Solute carrier family 22 member 3 |
| SLC25A47 | 5 | + | -1.72 | 0.048079 | S2547\_MOUSE Solute carrier family 25 member 47 |
| SLC6A12 | 1 | - | -1.75 | 0.025013 | S6A12\_HUMAN Sodium- and chloride-dependent betaine transporter |
| SLIT3 | 13 | + | -1.77 | 0.0024232 | SLIT3\_RAT Slit homolog 3 protein |
| SMC2 | Z | - | -1.60 | 0.0006688 | SMC2\_CHICK Structural maintenance of chromosomes protein 2 |
| SMIM5 | 18 | - | -2.08 | 9.40E-05 | SMIM5; small integral membrane protein 5 |
| SPC25 | 7 | + | -1.63 | 0.040141 | SPC25\_BOVIN Kinetochore protein Spc25 |
| SSPO | 2 | + | -1.87 | 0.014576 | SSPO\_CHICK SCO-spondin |
| STC2 | 13 | - | -1.84 | 0.0089164 | STC2\_PONAB Stanniocalcin-2 |
| STMN1 | 23 | + | -1.54 | 0.0041666 | STMN1\_CHICK Stathmin |
| SULT1C3 | 1 | + | -1.54 | 0.0006252 | ST1C1\_RAT Sulfotransferase 1C1 |
| TENM2 | 13 | - | -2.12 | 0.0021141 | TEN2\_CHICK Teneurin-2 |
| TFAP2D | 3 | - | -1.64 | 0.049114 | AP2D\_HUMAN Transcription factor AP-2-delta |
| TPD52 | 2 | - | -1.55 | 0.0016564 | TPD52\_RABIT Tumor protein D52 |
| TTK | 3 | - | -1.53 | 0.033053 | TTK\_HUMAN Dual specificity protein kinase TTK |
| TUBA1A | 33 | + | -1.64 | 0.0010961 | TBA1A\_RAT Tubulin alpha-1A chain |
| UPP1 | 2 | + | -1.87 | 0.007667 | UPP1\_MOUSE Uridine phosphorylase 1 |
| USH2A | 3 | + | -1.81 | 0.024613 | USH2A\_HUMAN Usherin |
| VSTM2A | 2 | + | -1.72 | 0.028514 | VTM2A\_HUMAN V-set and transmembrane domain-containing protein 2A |
| WNK2 | 12 | - | -1.76 | 0.031964 | WNK2\_MOUSE Serine/threonine-protein kinase WNK2 |
| ZONADHL | 24 | + | -1.79 | 0.014021 | SCN3B\_BOVIN Sodium channel subunit beta-3 |

\* The ratio of Fragments Per Kilobase of transcript per Million mapped reads (fpkm) in EM group to that in N group (|Fold changes| ≥ 1.5), adjust p value ≤ 0.05).

**Additional file 1: Table S5**. Gene expression changes for some pro-inflammatory molecules in the chicken ceca between Naïve uninfected control (N) and *Eimeria maxima* (EM) infected group

|  |  |  |  |
| --- | --- | --- | --- |
| **Gene\_ID#** | **Fold change\***  **(EM vs N)** | **Protein** | **Detailed description** |
| IL6 | 0.94 | IL6 | TB2/DP1/HVA22-related protein |
| TNFRSF10B | 1.61 | TNFRSF10B | Tumor necrosis factor Receptor Superfamily Member 10b) |
| VEGFC | 1.08 | VEGFC | Vascular endothelial growth factor C precursor |
| CD28 | 1.24 | CD28 | T cell antigen CD28 |
| LITAF | 1.21 | LITAF | LPS-induced tumor necrosis factor alpha factor |

\*The ratio of Fragments Per Kilobase of transcript per Million mapped reads (fpkm) in EM group to that in N group. In RNA-Seq, the relative expression of a transcript is proportional to the number of cDNA fragments that originate from it.