**S4 Table. Gene expression profile of the anterior intestine of gilthead sea bream in trial 2 (T2).** Functional gene categories: 1 = cell differentiation and proliferation; 2 = intestinal architecture and permeability; 3 = enterocyte mass and epithelial damage; 4 = interleukins and cytokines; 5 = pattern recognition receptors; 6 = mitochondria function and biogenesis.

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Functional | Gene | T2-D1 |  | T2-D2 |  | T2-D3 |  | T2-D4 |  | *ANOVA* |
| category | Mean | SEM |  | Mean | SEM |  | Mean | SEM |  | Mean | SEM |  | *P-value* |
| 1 | *PCNA* | 1.69a | 0.11 |  | 1.57ab | 0.24 |  | 1.24b | 0.04 |  | 1.74a | 0.23 |  | 0.050 |
| *HES1-B* | 0.83a | 0.07 |  | 0.86a | 0.03 |  | 1.20b | 0.13 |  | 0.72a | 0.08 |  | 0.001 |
| *KLF4* | 0.59a | 0.06 |  | 0.84b | 0.03 |  | 0.84b | 0.07 |  | 0.85b | 0.07 |  | 0.027 |
| *BMPR1A* | 0.59 | 0.04 |  | 0.54 | 0.03 |  | 0.65 | 0.08 |  | 0.58 | 0.04 |  | 0.224 |
| *GLI1* | 0.10 | 0.01 |  | 0.09 | 0.01 |  | 0.09 | 0.01 |  | 0.09 | 0.01 |  | 0.320 |
| *HHIP* | 0.54 | 0.05 |  | 0.52 | 0.05 |  | 0.55 | 0.03 |  | 0.50 | 0.05 |  | 0.159 |
| *WLs* | 0.17 | 0.01 |  | 0.16 | 0.01 |  | 0.16 | 0.01 |  | 0.15 | 0.01 |  | 0.250 |
| *Myc* | 0.09 | 0.01 |  | 0.08 | 0.01 |  | 0.08 | 0.01 |  | 0.08 | 0.01 |  | 0.743 |
| *CTNNB1* | 3.45 | 0.24 |  | 2.93 | 0.11 |  | 3.38 | 0.32 |  | 3.14 | 0.18 |  | 0.205 |
| 2 | *OCLN* | 2.09ab | 0.14 |  | 1.92a | 0.10 |  | 2.90b | 0.52 |  | 1.79a | 0.12 |  | 0.040 |
| *CDH1* | 5.76a | 0.37 |  | 4.73a | 0.26 |  | 7.39b | 1.36 |  | 5.97ab | 0.19 |  | 0.025 |
| *CX32.2* | 19.6a | 1.64 |  | 26.8b | 2.14 |  | 23.6ab | 2.33 |  | 18.2a | 1.83 |  | 0.027 |
| *MUC2* | 19.6a | 2.44 |  | 21.4ab | 2.43 |  | 30.5b | 3.76 |  | 21.8ab | 1.82 |  | 0.050 |
| *MUC13* | 31.2a | 3.22 |  | 28.5a | 1.93 |  | 45.8b | 5.91 |  | 25.1a | 2.39 |  | 0.001 |
| *ILK* | 1.00 | 0.06 |  | 0.87 | 0.04 |  | 1.04 | 0.06 |  | 0.93 | 0.05 |  | 0.022 |
| *CDH17* | 22.02 | 0.79 |  | 20.25 | 0.51 |  | 19.61 | 1.04 |  | 21.3 | 0.83 |  | 0.136 |
| *CXADR* | 1.80 | 0.10 |  | 1.60 | 0.05 |  | 1.98 | 0.25 |  | 1.67 | 0.08 |  | 0.081 |
| 3 | *GR* | 1.97ab | 0.30 |  | 1.88a | 0.08 |  | 2.44b | 0.22 |  | 1.97a | 0.07 |  | 0.006 |
| *PRDX1* | 13.2ab | 1.94 |  | 10.5a | 1.57 |  | 17.9b | 3.49 |  | 9.67a | 1.51 |  | 0.050 |
| *ALPI* | 19.70 | 1.92 |  | 17.38 | 0.99 |  | 22.08 | 2.73 |  | 19.9 | 2.64 |  | 0.556 |
| *FABP2* | 91.19 | 10.62 |  | 95.76 | 8.72 |  | 77.02 | 13.6 |  | 60.7 | 12.1 |  | 0.176 |
| *CALR* | 8.89 | 0.90 |  | 9.10 | 1.23 |  | 12.49 | 2.93 |  | 8.70 | 0.71 |  | 0.278 |
| 4 | *IL-6* | 0.008a | 0.002 |  | 0.010ab | 0.001 |  | 0.015b | 0.003 |  | 0.009ab | 0.001 |  | 0.050 |
| *IL-12B* | 0.14a | 0.01 |  | 0.14a | 0.01 |  | 0.20b | 0.02 |  | 0.16ab | 0.01 |  | 0.042 |
| *CCR11* | 2.17a | 0.21 |  | 2.21ab | 0.11 |  | 2.85b | 0.32 |  | 1.89a | 0.19 |  | 0.033 |
| *IL-6RB* | 0.68 | 0.07 |  | 0.55 | 0.05 |  | 0.064 | 0.051 |  | 0.53 | 0.06 |  | 0.285 |
| *IL-8* | 0.15 | 0.03 |  | 0.12 | 0.01 |  | 0.15 | 0.03 |  | 0.14 | 0.02 |  | 0.254 |
| *IL-8RA* | 0.06 | 0.01 |  | 0.04 | 0.01 |  | 0.07 | 0.01 |  | 0.03 | 0.01 |  | 0.456 |
| *IL-10* | 0.08 | 0.01 |  | 0.05 | 0.01 |  | 0.09 | 0.01 |  | 0.06 | 0.01 |  | 0.118 |
| *IL-10RA* | 0.30 | 0.03 |  | 0.23 | 0.03 |  | 0.33 | 0.02 |  | 0.29 | 0.02 |  | 0.110 |
| *TNFα* | 0.05 | 0.01 |  | 0.05 | 0.01 |  | 0.06 | 0.01 |  | 0.06 | 0.00 |  | 0.192 |
| *CXC* | 2.45 | 0.24 |  | 2.33 | 0.21 |  | 2.34 | 0.42 |  | 2.71 | 0.34 |  | 0.833 |
| *CCR3* | 0.40 | 0.04 |  | 0.35 | 0.04 |  | 0.44 | 0.04 |  | 0.36 | 0.05 |  | 0.630 |
| 5 | *MRC1* | 0.39b | 0.05 |  | 0.28ab | 0.01 |  | 0.28ab | 0.02 |  | 0.25a | 0.03 |  | 0.133 |
| *LGALS1* | 1.43a | 0.17 |  | 1.55ab | 0.24 |  | 2.12b | 0.49 |  | 1.28a | 0.19 |  | 0.074 |
| *LGALS8* | 0.98a | 0.08 |  | 0.94a | 0.03 |  | 1.30b | 0.16 |  | 0.80a | 0.05 |  | 0.001 |
| *CSL2* | 1.95a | 0.50 |  | 0.12a | 0.05 |  | 6.11b | 2.4 |  | 0.88a | 0.52 |  | 0.030 |
| *TLR1* | 0.33 | 0.03 |  | 0.28 | 0.02 |  | 0.33 | 0.03 |  | 0.28 | 0.02 |  | 0.195 |
| *CLEC10A* | 0.01 | 0.00 |  | 0.02 | 0.00 |  | 0.01 | 0.001 |  | 0.01 | 0.00 |  | 0.441 |
| *FCL* | 27.2 | 5.02 |  | 20.4 | 3.06 |  | 34.2 | 13.3 |  | 16.6 | 3.13 |  | 0.333 |
| 6 | *mtHsp10* | 1.74 | 0.10 |  | 2.19 | 0.32 |  | 2.01 | 0.19 |  | 2.27 | 0.22 |  | 0.203 |
| *mtHsp70* | 1.41 | 0.07 |  | 1.15 | 0.07 |  | 1.64 | 0.32 |  | 1.52 | 0.10 |  | 0.114 |