**Supplementary Table 5A.** Top 20 differentially expressed hepatic genes upregulated in the primiparous cows offered the high concentrate diet (n = 6) compared with those offered the low concentrate diet (n = 6), as ranked by the P(BH) values.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Gene symbol** | **Fold change** | **P1** | **Name** | **M2** | **S2** | **D2** | **C2** |
| *CCDC80* | 30.39 | 6.30E-09 | coiled-coil domain containing 80 |  | x |  |  |
| *VCAN* | 6.35 | 7.01E-06 | versican |  |  | x |  |
| *POSTN* | 1.69 | 9.76E-06 | periostin |  | x | x |  |
| *COL1A2* | 3.93 | 1.06E-05 | collagen type I alpha 2 chain | x | x | x | x |
| *IFITM3\_1* | 1.80 | 1.39E-05 | interferon induced transmembrane protein 3, subunit 1 |  |  |  |  |
| *LUM* | 3.34 | 2.98E-05 | lumican | x |  |  | x |
| *MGP* | 2.84 | 3.01E-05 | matrix Gla protein |  | x | x | x |
| *CPXM2* | 20.17 | 3.18E-05 | carboxypeptidase X (M14 family), member 2 |  |  |  |  |
| *COL1A1* | 3.55 | 3.28E-05 | collagen type I alpha 1 chain | x | x | x | x |
| *VIM* | 1.83 | 6.54E-05 | vimentin | x | x | x | x |
| *PLOD2* | 2.34 | 6.81E-05 | procollagen-lysine,2-oxoglutarate 5-dioxygenase 2 | x |  |  |  |
| *COL4A5* | 1.64 | 9.64E-05 | collagen type IV alpha 5 chain |  | x |  |  |
| *COL3A1* | 2.58 | 1.70E-04 | collagen type III alpha 1 chain | x | x | x | x |
| *SPARC* | 2.19 | 1.72E-04 | secreted protein acidic and cysteine rich |  |  | x |  |
| *TENT5C* | 1.75 | 2.70E-04 | terminal nucleotidyltransferase 5C |  |  | x | x |
| *COL6A2* | 1.57 | 2.95E-04 | collagen type VI alpha 2 chain |  |  |  |  |
| *LOC112449619* | 2.02 | 3.16E-04 | annexin A13-like |  |  |  |  |
| *LOC524810* | 3.18 | 3.22E-04 | IgM |  |  |  |  |
| *FKBP5* | 2.58 | 3.29E-04 | FK506 binding protein 5 |  | x |  |  |
| *MMP2* | 1.92 | 3.63E-04 | matrix metallopeptidase 2 | x | x | x | x |

**1**Adjusted with Benjanimi-Hochberg method.

**2**Main functions based on GO terms: M, metabolic process; S, response to stimulus; D, developmental process; C, multiple cellular process*.*

**Supplementary Table 5B.** Top 20 differentially expressed hepatic genes downregulated in the primiparous cows offered the high concentrate diet (n = 6) compared with those offered the low concentrate diet (n = 6), as ranked by the P values.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Gene symbol** | **Fold change** | **P1** | **Name** | **M2** | **I2** | **S2** | **D2** |
| *MIOX* | 3.66 | 4.01E-07 | myo-inositol oxygenase | x |  |  |  |
| *AFP* | 51.65 | 1.39E-06 | alpha fetoprotein | x |  | x | x |
| *PSPH* | 3.78 | 7.99E-06 | phosphoserine phosphatase | x |  |  | x |
| *ALDH1L2* | 2.13 | 1.03E-05 | aldehyde dehydrogenase 1 family member L2 | x |  |  |  |
| *HAMP* | 2.11 | 1.57E-05 | hepcidin antimicrobial peptide | x | x | x |  |
| *GIMAP4* | 8.60 | 1.60E-05 | GTPase, IMAP family member 4 |  |  |  |  |
| *LOC768255* | 10.05 | 3.60E-05 | GTPase, IMAP family member 4-like |  |  |  |  |
| *SHMT2* | 1.74 | 8.91E-05 | serine hydroxymethyltransferase 2 | x | x | x |  |
| *PYCR1* | 2.94 | 1.06E-04 | pyrroline-5-carboxylate reductase 1 | x |  | x |  |
| *CCDC86* | 2.11 | 1.74E-04 | coiled-coil domain containing 86 |  |  |  |  |
| *LOXL4* | 2.03 | 2.65E-04 | lysyl oxidase like 4 | x |  |  |  |
| *LOC788425* | 1.63 | 3.03E-04 | aflatoxin B1 aldehyde reductase member 4 |  |  |  |  |
| *ASPH* | 1.70 | 3.03E-04 | aspartate beta-hydroxylase | x |  |  |  |
| *SRXN1* | 2.38 | 3.68E-04 | sulfiredoxin 1 |  |  | x |  |
| *SLC35D1* | 1.76 | 5.32E-04 | solute carrier family 35 member D1 |  |  |  |  |
| *GSTP1\_2* | 2.46 | 5.54E-04 | glutathione S-transferase pi 1, subunit 2 |  |  |  |  |
| *PHGDH* | 1.84 | 5.55E-04 | phosphoglycerate dehydrogenase |  |  |  | x |
| *MYC* | 1.90 | 5.94E-04 | MYC proto-oncogene, bHLH transcription factor |  | x | x | x |
| *RXRG* | 2.23 | 5.98E-04 | retinoid X receptor gamma |  |  | x | x |
| *TMEM86A* | 1.49 | 6.08E-04 | transmembrane protein 86A |  |  |  |  |

**1**Adjusted with Benjanimi-Hochberg method.

**2**Main functions based on GO terms: M, metabolic process; I, immune system process; S, response to stimulus; D, developmental process*.*