

Molecular and metabolomic changes in the proximal colon of pigs infected with *Trichuris suis*

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Supplemental Tables S1, S3, S4, S5, S6, S7, S8, S9, S10, S11, S12

Supplemental Table S1. Isolation of larval and adult stages of *Trichuris suis* from the cecum and proximal colon.

| Exp #/Source | Pig ID/sex | Sow ID/date of birth | <i>Trichuris</i> batch # / ~egg dose | <i>Trichuris</i> / <i>Ascaris</i> adults/ | | Proximal colon mucosa pathology/colon contents | Molecular/metabolic Analysis | |
|----------------|---------------|----------------------|---|---|-------------|---|---------------------------------|--|
| | | | | DPI recovery | liver spots | | | |
| #15-19/BARC | 1092/B | 689/08/07/2015 | #15-01 - 10,000 | 42 | 900 0/0 | hemorrhagic/loose | | |
| | 1096/B | 163/08/05/2015 | #15-01 - 10,000 | 42 | 0 0/0 | lightly hemorrhagic/semi-solid | | |
| | 1128/B | 1181/08/14/2015 | #15-01 - 10,000 | 42 | 1900 0/0 | hemorrhagic/loose | | |
| | 1103/B | 61/08/06/2015 | #15-01 - 10,000 | 42 | 5435 0/0 | hemorrhagic/loose | | |
| | notag/B | | #15-01 - 10,000 | 42 | 730 0/0 | hemorrhagic/loose | | |
| | 1088/B | 1672/08/08/2015 | #15-01 - 10,000 | 42 | 711 0/0 | lightly hemorrhagic/loose | | |
| | 1125/B | 1185/08/14/2015 | #15-01 - 10,000 | 42 | 2775 0/0 | hemorrhagic | | |
| | notag/B | | #15-01 - 10,000 | 42 | 1010 0/0 | lightly hemorrhagic/loose | | |
| | 1115/B | 721/08/11/2015 | #15-01 - 10,000 | 42 | 76 0/0 | lightly hemorrhagic/semi-solid | | |
| | 1116/B | 861/08/12/2015 | #15-01 - 10,000 | 42 | 1740 0/0 | hemorrhagic/loose | | |
| | #15-19/BARC | 1102/B | 868/08/05/2015 | #15-01 - 10,000 | 49 | 3795 0/0 | lightly hemorrhagic/loose | |
| | | 1118/B | 490/08/14/2015 | #15-01 - 10,000 | 49 | 400 0/0 | hemorrhagic/loose/bloody | |
| 1095/B | | 689/08/07/2015 | #15-01 - 10,000 | 49 | 2250 0/0 | lightly hemorrhagic/loose | | |
| 1104/B | | 1535/08/06/2015 | #15-01 - 10,000 | 49 | 1286 0/0 | lightly hemorrhagic/loose | | |
| 1123/B | | 721/08/11/2015 | #15-01 - 10,000 | 49 | 2372 0/0 | lightly hemorrhagic/loose | | |
| 1119/B | | 861/08/12/2015 | #15-01 - 10,000 | 49 | 1615 0/0 | lightly hemorrhagic/loose | | |
| 1114/B | | 861/08/12/2015 | #15-01 - 10,000 | 49 | 1652 0/0 | lightly hemorrhagic/loose | | |
| 1111/B | | 861/08/12/2015 | #15-01 - 10,000 | 49 | 415 0/0 | hemorrhagic/loose | | |
| 1105/B | | 861/08/12/2015 | #15-01 - 10,000 | 49 | 355 0/0 | lightly hemorrhagic/loose | | |
| 1107/B | | 1181/08/14/2015 | #15-01 - 10,000 | 49 | 1602 0/0 | lightly hemorrhagic/loose | | |
| #15-11/Oakhill | | 64376/B | 108/05/04/2015 | #13-02 - 15,000 | 56 | 0 0/0 | lightly hemorrhagic/loose | |
| | | 64370/B | 756/05/02/2015 | #13-02 - 15,000 | 56 | 6000* 0/0 | hemorrhagic/loose | |
| | 64398/B | 702/05/01/2015 | #13-02 - 15,000 | 56 | 6280 0/0 | hemorrhagic/loose | | |
| | 64378/B | 910/05/02/2015 | #13-02 - 15,000 | 56 | 5050 0/0 | hemorrhagic/loose | | |
| | 64366/B | 46/04/30/2015 | #13-02 - 15,000 | 56 | 6350 0/0 | hemorrhagic/loose | | |
| | 64405/B | 890/05/02/2015 | #13-02 - 15,000 | 56 | 1300* 0/0 | hemorrhagic/loose | | |
| | 64415/B | 756/05/02/2015 | #13-02 - 15,000 | 56 | 10 0/0 | normal/loose | | |
| | 64375/B | 768/04/28/2015 | #13-02 - 15,000 | 56 | 3,000 0/0 | hemorrhagic/loose | | |
| | 64380/B | 120/05/01/2015 | #13-02 - 15,000 | 56 | 50 0/0 | normal/loose | | |
| | 64379/B | 768/04/28/2015 | #13-02 - 15,000 | 56 | 4680 0/0 | hemorrhagic/loose | | |
| | 64388/B | 863/04/30/2015 | #13-02 - 15,000 | 56 | 800 0/0 | hemorrhagic/loose | | |
| | #15-1/Oakhill | 23824/B | 532/12/05/2014 | #13-02 - 10,000 | 28 | 9500 0/0 | hemorrhagic/liquid | |
| 23796/B | | 1023/11/28/2014 | #13-02 - 10,000 | 28 | 15,000 0/0 | hemorrhagic/liquid | | |
| 23802/B | | 1221/11/29/2014 | #13-02 - 10,000 | 28 | 1,700 0/0 | strongly hemorrhagic/liquid | | |
| #15-1/Oakhill | 23816/B | 1550/12/05/2014 | #13-02 - 10,000 | 53 | 1130 0/0 | normal/normal | | |
| | 23828/B | Oakhill/ | #13-02 - 10,000 | 53 | 1000 0/0 | lightly hemorrhagic/loose | | |
| | 23829/B | Oakhill/ | #13-02 - 10,000 | 53 | 0 0/0 | normal/loose | | |
| | 23837/B | Oakhill/ | #13-02 - 10,000 | 53 | 1500* 0/0 | lightly hemorrhagic/loose | | |
| | 23831/B | Oakhill/ | #13-02 - 10,000 | 53 | 1600 0/0 | lightly hemorrhagic/loose | | |
| | 23844/B | Oakhill/ | #13-02 - 10,000 | 53 | 0 0/0 | normal/normal | | |
| | 23845/B | Oakhill/ | #13-02 - 10,000 | 53 | 800 0/0 | normal/normal | | |
| | 23848/B | Oakhill/ | #13-02 - 10,000 | 53 | 65 0/0 | normal/normal | | |
| | 23849/B | Oakhill/ | #13-02 - 10,000 | 53 | 1100 0/0 | lightly hemorrhagic/loose | | |
| #15-1/Oakhill | 64376/B | 108/05/04/2015 | #13-02 - 10,000 | 56 | 0 0/0 | lightly hemorrhagic/normal | | |
| | 64370/B | 756/05/02/2015 | #13-02 - 10,000 | 56 | 6000* 0/0 | hemorrhagic/normal | | |
| | 64398/B | 702/05/01/2015 | #13-02 - 10,000 | 56 | 6280 0/0 | hemorrhagic/normal | | |
| | 64378/B | 910/05/02/2015 | #13-02 - 10,000 | 56 | 5050 0/0 | hemorrhagic/normal | | |
| | 64366/B | 46/04/30/2015 | #13-02 - 10,000 | 56 | 6350 0/0 | hemorrhagic/normal | | |
| | 64405/B | 890/05/02/2015 | #13-02 - 10,000 | 56 | 1300* 0/0 | hemorrhagic/normal | | |
| | 64415/B | 756/05/02/2015 | #13-02 - 10,000 | 56 | 10 0/0 | normal/normal | | |
| | 64375/B | 768/04/28/2015 | #13-02 - 10,000 | 56 | 3,000 0/0 | hemorrhagic/normal | | |
| | 64380/B | 120/05/01/2015 | #13-02 - 10,000 | 56 | 50 0/0 | normal/normal | | |
| | 64379/B | 768/04/28/2015 | #13-02 - 10,000 | 56 | 4680 0/0 | hemorrhagic/normal | | |
| | 64388/B | 863/4/30/2015 | #13-02 - 10,000 | 56 | 800 0/0 | hemorrhagic/normal | | |
| | #13-2/BARC | 161/M | 334/06/23/2013 | #10-01 - 10,000 | 28 | 1250 2F/0 | | |
| 182/F | | 283/06/25/2013 | #10-01 - 10,000 | 28 | 1000 1F/0 | | | |
| 172/F | | 339/06/25/2013 | #10-01 - 10,000 | 28 | 250 1F/1 | | | |
| 170/M | | 339/06/25/2013 | #13-01 - 10,000 | 28 | 1375 1F/0 | | | |
| 7698/F | | 320/06/13/2013 | #13-01 - 10,000 | 28 | 8000 0/0 | | | |
| #13-2/BARC | | 190M | 313/06/27/2013 | #10-01 - 10,000 | 54 | 0 1F, 2M/0 | hemorrhagic/loose | |
| | 615/F | 334/06/23/2013 | #10-01 - 10,000 | 54 | 150 0/0 | hemorrhagic/loose | | |
| | 221/M | | #10-01 - 10,000 | 54 | 1100 2F/0 | normal/normal | | |
| | 222/M | 312/07/14/2013 | #10-01 - 10,000 | 54 | 154 0/0 | hemorrhagic/loose | | |
| | 20/M | 312/07/14/2013 | #10-01 - 10,000 | 54 | 222 0/0 | hemorrhagic/loose | | |
| | 221/M | 312/07/14/2013 | #10-01 - 10,000 | 54 | 0 0/0 | hemorrhagic/loose | | |
| | 7077/F | 343/08/04/2013 | #10-01 - 10,000 | 54 | 0 0/0 | lightly hemorrhagic/normal | | |

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|------------|--------|-----------------|-----------------|----|-----------|--------------------------------------|------------------------|
| | 7075/F | 343/08/04/2013 | #10-01 -10,000 | 54 | 0 0/0 | normal/normal | |
| | 7071/F | 343/08/04/2013 | #10-01 -10,000 | 54 | 480 0/0 | normal/normal | |
| | 7076/F | 343/08/04/2013 | #10-01 -10,000 | 54 | 0 0/0 | hemorrhagic/loose | |
| #13-2/BARC | 7419/F | 302/11/05/2012 | #12-01 - 10,000 | 54 | 107 0/0 | | |
| | 418/F | 302/11/05/2012 | #12-01 - 10,000 | 54 | 240 0/0 | | |
| | 7420/F | 231/11/06/2012 | #12-01 - 10,000 | 54 | 289 0/0 | | |
| | 7421/M | 231/11/06/2012 | #12-01 - 10,000 | 54 | 500 0/0 | | |
| | 7411/M | 302/11/05/2012 | #12-01 - 10,000 | 54 | 190 0/0 | | |
| | 7427/M | 231/11/06/2012 | #12-01 - 10,000 | 54 | 160 0/0 | | |
| | 7429/F | 231/11/06/2012 | #12-01 - 10,000 | 54 | 1 0/0 | | |
| | 7423/F | 231/11/06/2012 | #12-01 - 10,000 | 54 | 147 0/0 | | |
| | 7412/F | 231/11/06/2012 | #12-01 - 10,000 | 54 | 105 0/0 | | |
| | 7410/M | 302/11/05/2012 | #12-01 - 10,000 | 54 | 170 0/0 | | |
| #13-2/BARC | 96/F | 311/01/07/2013 | #12-01 - 10,000 | 56 | 0 1F/0 | | |
| | 554/F | 367/01/13/2013 | #12-01 - 10,000 | 56 | 0 3M/0 | | |
| | 546/F | 345/01/13/2013 | #12-01 - 10,000 | 56 | 230 0/0 | | |
| | 538/F | 348/01/12/2013 | #12-01 - 10,000 | 56 | 187 0/0 | | |
| | 7536/F | 348/01/12/2013 | #12-01 - 10,000 | 56 | 55 0/0 | | |
| | 7541/F | 345/01/13/2013 | #12-01 - 10,000 | 56 | 67 0/0 | | |
| | 7555/F | 367/01/13/2013 | #12-01 - 10,000 | 56 | 33 0/0 | | |
| | 7537/F | 348/01/12/2013 | #12-01 - 10,000 | 56 | 240 1F/0 | | |
| #12-7/BARC | 122/F | 8088/03/17/2012 | #07-01 - 10,000 | 21 | 2750 0/0 | normal/normal | |
| | 126/F | 8088/03/17/2012 | #07-01 - 10,000 | 21 | 3593 0/0 | normal/normal | |
| | 126/M | 306/03/11/2012 | #10-01 - 10,000 | 21 | 1530 0/0 | normal/normal | |
| | 130/F | 306/03/11/2012 | #10-01 - 10,000 | 21 | 3220 0/0 | normal/normal | |
| | 119/M | 8088/03/17/2012 | #12-01 - 10,000 | 21 | 765 0/0 | normal/normal | |
| | 112/M | 690/03/16/2012 | #12-01 - 10,000 | 21 | 980 0/0 | normal/normal | |
| | 113/F | 690/03/16/2012 | #07-02 - 10,000 | 21 | 1470 0/0 | normal/normal | |
| | 115/F | 690/03/16/2012 | #07-02 - 10,000 | 21 | 1530 0/0 | normal/normal | |
| #12-7/BARC | 7324/M | 5070/08/12/2012 | #07-02 - 10,000 | 28 | 1,666 0/0 | abundant mucus and hemorrhagic | |
| | 7320/M | 5070/08/12/2012 | #10-01 - 10,000 | 28 | 833* 0/0 | abundant mucus and hemorrhagic | |
| #12-7/BARC | 7364 | | #10-01 - 10,000 | 34 | 51 0/0 | hemorrhagic/diarrhea | |
| | 7383/M | 0547/09/15/2012 | #07-02 - 10,000 | 34 | 3500 0/0 | hemorrhagic/diarrhea | |
| | 7381/M | 0547/09/15/2012 | #07-02 - 10,000 | 34 | 2750 0/0 | hemorrhagic/diarrhea | |
| #12-7/BARC | 7321/F | 5070/08/12/2012 | #07-02 - 10,000 | 42 | 110 0/0 | normal/soft | |
| | 7322/F | 5070/08/12/2012 | #07-02 - 10,000 | 42 | 0 0/0 | normal/soft | |
| | 7327/F | 5070/08/12/2012 | #10-01 - 10,000 | 42 | 0 0/0 | normal/soft | |
| #12-7/BARC | 7282/M | 302/05/21/2012 | #12-01 - 10,000 | 51 | 570 0/0 | lightlyhemorrhagic/normal | |
| | 7255/M | 5077/05/16/2012 | #12-01 - 10,000 | 51 | 0 0/0 | normal/normal | |
| | 7275/M | 322/05/17/2012 | #12-01 - 10,000 | 51 | 32 0/0 | normal/normal | |
| | 7243/M | 317/05/16/2012 | #12-01 - 10,000 | 51 | 2 0/0 | normal/normal | |
| | 7306/M | 182/05/23/2012 | #12-01 - 10,000 | 51 | 0 0/0 | normal/normal | |
| | 7291/M | 182/05/23/2012 | #12-01 - 10,000 | 51 | 225 0/0 | normal/normal | |
| | 7302/M | 182/05/23/2012 | #12-01 - 10,000 | 51 | 255 0/0 | normal/normal | |
| | 7326/M | 188/05/24/2012 | #12-01 - 10,000 | 51 | 185 0/0 | normal/normal | |
| | 7324/M | 188/05/24/2012 | #12-01 - 10,000 | 51 | 250 0/0 | normal/normal | |
| | 7321/M | 188/05/24/2012 | #12-01 - 10,000 | 51 | 0 0/0 | normal/normal | |
| #12-7/BARC | 7367/F | 318/09/13/2012 | #12-01 - 10,000 | 55 | 0 0/0 | normal/normal | |
| | | 0547/09/18/2012 | #12-01 - 10,000 | 55 | 345 0/0 | lightly hemorrhagic/normal | |
| | | 0547/09/18/2012 | #12-01 - 10,000 | 55 | 31 0/0 | hemorrhagic/diarrhea; serosal fragil | |
| | | 0547/09/18/2012 | #12-01 - 10,000 | 55 | 78 0/0 | hemorrhagic/diarrhea; serosal fragil | |
| | 7389/F | 0547/09/18/2012 | #12-01 - 10,000 | 55 | 350 0/0 | normal/loose | |
| | | 0547/09/18/2012 | #12-01 - 10,000 | 55 | 0 0/0 | normal/normal | |
| | | 4088/09/20/2012 | #12-01 - 10,000 | 55 | 38 0/0 | hemorrhagic/diarrhea; serosal fragil | |
| | | 4088/09/20/2012 | #12-01 - 10,000 | 55 | 192 0/0 | hemorrhagic/diarrhea; serosal fragil | |
| | | 0245/09/21/2012 | #12-01 - 10,000 | 55 | 0 0/0 | normal/normal | |
| | | 230/08/13/2012 | #12-01 - 10,000 | 55 | 0 0/0 | normal/normal | |
| #12-2/BARC | 660/F | 194/11/22/2011 | #11-01 - 10,000 | 21 | 1710 0/0 | lightly hemorrhagic/semi-solid | Physiology Fig. 2a; 2b |
| | 662/M | 194/11/22/2011 | #11-01 - 10,000 | 21 | 3140 0/0 | lightly hemorrhagic/semi-solid | Physiology Fig. 2a; 2b |
| | 650/F | 185/11/05/2011 | #11-01 - 10,000 | 21 | 2200 0/0 | lightly hemorrhagic/semi-solid | Physiology Fig. 2a; 2b |
| | 673/F | 182/11/24/2011 | #11-01 - 10,000 | 21 | 2220 0/0 | mildly pathology/loose | Physiology Fig. 2a; 2b |
| | 651/F | 185/11/05/2011 | #11-01 - 10,000 | 21 | 2000 0/0 | mildly pathology/loose | Physiology Fig. 2a; 2b |
| | 658/F | 185/11/05/2011 | #11-01 - 10,000 | 21 | 1,300 0/0 | lightly hemorrhagic/semi-solid | Physiology Fig. 2a; 2b |
| #12-2/BARC | 7044/M | 199/01/07/2012 | 11:01 - 10,000 | 35 | 1 0/0 | normal/normal | Physiology Fig. 2a; 2b |
| | 7070/M | 1895/01/10/2012 | 11:01 - 10,000 | 35 | 2 0/0 | normal/normal | Physiology Fig. 2a; 2b |
| | 7091/M | 5001/01/11/2012 | 11:01 - 10,000 | 35 | 200 0/0 | normal/normal | Physiology Fig. 2a; 2b |
| | 7031/M | 6001/01/06/2012 | 11:01 - 10,000 | 35 | 450* 0/0 | lightly hemorrhagic/loose | Physiology Fig. 2a; 2b |

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|------------|--------|------------------|---------------------|----|-------------|----------------------------------|-------------------------|
| | 7300/M | 206/01/12/2012 | 11:01 - 10,000 | 35 | 350 0/0 | lightly hemorrhagic/loose | Physiology Fig. 2a; 2b |
| | 7050/M | 316/01/10/2012 | 11:01 - 10,000 | 35 | 400 0/0 | lightly hemorrhagic/loose | Physiology Fig. 2a; 2b |
| | 7034/M | 6001/01/06/2012 | 11:01 - 10,000 | 35 | 150 0/0 | normal/semi-solid | Physiology Fig. 2a; 2b |
| | 7036/M | 6001/01/06/2012 | 11:01 - 10,000 | 35 | 4 0/0 | normal/semi-solid | Physiology Fig. 2a; 2b |
| #12-2/BARC | 7081/M | 321/01/10/2012 | 11:01 - 10,000 | 42 | 130 0/0 | lightly hemorrhagic/loose | Physiology Fig. 2a; 2b |
| | 7023/M | 1088/01/06/2012 | 11:01 - 10,000 | 42 | 44 0/0 | normal/semi-solid | Physiology Fig. 2a; 2b |
| | 7040/M | 199/01/07/2012 | 11:01 - 10,000 | 42 | 0 0/0 | normal/semi-solid | Physiology Fig. 2a; 2b |
| | 7044/M | 199/01/07/2012 | 11:01 - 10,000 | 42 | 3 0/0 | normal/semi-solid | Physiology Fig. 2a; 2b |
| | 7092/M | 5001/01/11/2012 | 11:01 - 10,000 | 42 | 79 0/0 | normal/semi-solid | Physiology Fig. 2a; 2b |
| | 7069/M | 1977/01/10/2012 | 11:01 - 10,000 | 42 | 52 0/0 | normal/normal | Physiology Fig. 2a; 2b |
| | 7021/M | 1088/01/06/2012 | 11:01 - 10,000 | 42 | 37 0/0 | normal/semi-solid | Physiology Fig. 2a; 2b |
| | 7043/M | 199/01/07/2012 | 11:01 - 10,000 | 42 | 5 0/0 | normal/semi-solid | Physiology Fig. 2a; 2b |
| #12-2/BARC | 659/F | 185/11/05/2011 | 11:01 - 10,000 | 52 | 0 0/0 | normal/normal | Physiology Fig. 2a; 2b |
| | 695/F | 1950/11/29/2011 | 11:01 - 10,000 | 52 | 61* 0/0 | lightly hemorrhagic/semi-solid | Physiology Fig. 2a; 2b |
| | 671/F | 182/11/24/2011 | 11:01 - 10,000 | 52 | 0 0/0 | normal/normal | Physiology Fig. 2a; 2b |
| | 692/M | 1950/11/29/2011 | 11:01 - 10,000 | 52 | 0 0/0 | normal/normal | Physiology Fig. 2a; 2b |
| | 55/F | 185/11/05/2011 | 11:01 - 10,000 | 52 | 1009 0/0 | mildly hemorrhagic/loose | Physiology Fig. 2a; 2b |
| #12-2/BARC | 653/F | 185/11/05/2011 | 11:01 - 10,000 | 53 | 291 0/0 | fragile tissue/loose | Physiology Fig. 2a; 2b |
| | 685/F | 6009/11/24/2011 | 11:01 - 10,000 | 53 | 6 0/0 | normal/normal | Physiology Fig. 2a; 2b |
| | 682/F | 6009/11/24/2011 | 11:01 - 10,000 | 53 | 0 0/0 | normal/normal | Physiology Fig. 2a; 2b |
| | 683/M | 6009/11/24/2011 | 11:01 - 10,000 | 53 | 328 0/0 | lightly hemorrhagic/semi-solid | Physiology Fig. 2a; 2b |
| | 698/F | 1950/11/29/2011 | 11:01 - 10,000 | 53 | 0 0/0 | normal/normal | Physiology Fig. 2a; 2b |
| #10-6/BARC | 31/F | 1942/08/15/2010 | #10-06 - 10,000 | 33 | 1158 0/0 | | Metabolomics; Fig. 6-11 |
| | 35/F | 1942/08/15/2010 | #10-06 - 10,000 | 33 | 914 0/0 | | Metabolomics; Fig. 6-11 |
| | 9066/F | 1948/08/06/2010 | #10-06 - 10,000 | 33 | 884 0/0 | | Metabolomics; Fig. 6-11 |
| | 9069/F | 1948/08/06/2010 | #10-06 - 10,000 | 33 | 1225 0/0 | | Metabolomics; Fig. 6-11 |
| | 30/F | 1942/08/15/2010 | #10-06 - 10,000 | 33 | 1275 0/0 | | Metabolomics; Fig. 6-11 |
| | 37/F | 1942/08/15/2010 | #10-06 - 10,000 | 33 | 708 0/0 | | Metabolomics; Fig. 6-11 |
| | 35/M | 1942/08/15/2010 | #10-06 - 10,000 | 33 | 1176 0/0 | | Metabolomics; Fig. 6-11 |
| | 9050/F | 1329/08/05/2010 | #10-06 - 10,000 | 33 | 1080 0/0 | | Metabolomics; Fig. 6-11 |
| | 9068/F | 1948/08/06/2010 | #10-06 - 10,000 | 33 | 1160 0/0 | | Metabolomics; Fig. 6-11 |
| | 9085/F | 1977/08/07/2010 | #10-06 - 10,000 | 33 | 956 3F;1M/1 | | ND |
| | 9070/F | 484/08/07/2010 | #10-06 - 10,000 | 33 | 428* 0/0 | | Metabolomics; Fig. 6-11 |
| | 9072/F | 484/08/07/2010 | #10-06 - 10,000 | 33 | 940 0/0 | | Metabolomics; Fig. 6-11 |
| #10-6/BARC | 9074/F | 484/08/07/2010 | #10-01 - 10,000 | 52 | 0 0/0 | normal/normal | |
| | 9071/F | 484/08/07/2010 | #10-01 - 10,000 | 52 | 0 0/0 | normal/normal | |
| | 9081/F | 1977/08/07/2010 | #10-01 - 10,000 | 52 | 0 1F/0 | normal/normal | |
| | 33/F | 1942/08/15/2010 | #10-01 - 10,000 | 52 | 1089 0/0 | heavy mucus; hemorrhagic/normal | Transcriptomics; Fig. 5 |
| | 39/F | 1942/08/15/2010 | #10-01 - 10,000 | 52 | 323 0/0 | heavy mucus; hemorrhagic/normal | Transcriptomics; Fig. 5 |
| | 30/F | 1942/08/15/2010 | #10-01 - 10,000 | 52 | 0 0/0 | normal/normal | Transcriptomics; Fig. 5 |
| | 9061/F | 1948/08/06/2010 | #10-01 - 10,000 | 52 | 0 0/0 | normal/normal | Transcriptomics; Fig. 5 |
| #10-6/BARC | 30/M | 1942/08/15/2010 | #10-01 - 10,000 | 53 | 0 0/0 | normal/normal | |
| | 9057/F | 1329/08/05/2010 | #10-01 - 10,000 | 53 | 0 0/0 | normal/normal | Transcriptomics; Fig. 5 |
| | 9052/F | 1329/08/05/2010 | #10-01 - 10,000 | 53 | 83 0/0 | normal/normal | |
| | 12/F | 1907/08/10/2010 | #10-01 - 10,000 | 53 | 0 0/0 | normal/normal | Transcriptomics; Fig. 5 |
| | 9063/F | 1948/08/06/2010 | #10-01 - 10,000 | 53 | 0 0/0 | normal/normal | Transcriptomics; Fig. 5 |
| | 9067/F | 1948/08/06/2010 | #10-01 - 10,000 | 53 | 567 0/0 | heavy mucus; hemorrhagic/normal | Transcriptomics; Fig. 5 |
| | 9/F | 1437/08/10/2010 | #10-01 - 10,000 | 53 | 0 1F;4M/0 | normal/normal | |
| #09-7/BARC | 3057/ | 427/06/01/2009 | #09-01/-02 - 30,000 | 21 | 4000 0/0 | hemorrhagic/loose | Transcriptomics; Fig. 4 |
| | 3073/F | 300/06/04/2009 | #09-01/-02 - 30,000 | 21 | 1666 0/0 | hemorrhagic/loose | Transcriptomics; Fig. 4 |
| | 3087/F | 107/06/06/2009 | #09-01/-02 - 30,000 | 21 | 4000 0/0 | strongly hemorrhagic/loose/blood | |
| | 4041/ | 438/06/19/2009 | #09-01/-02 - 30,000 | 21 | 7000 0/0 | hemorrhagic/loose | |
| | 4062/ | | #09-01/-02 - 30,000 | 21 | 1000 0/0 | hemorrhagic/loose | |
| | 3094/M | 466/06/09/2009 | #09-01/-02 - 30,000 | 21 | 2500 0/0 | hemorrhagic/loose | |
| | 4040/M | 438/06/19/2009 | #09-01/-02 - 30,000 | 21 | 2833 0/0 | hemorrhagic/loose | |
| | 4044/M | 438/06/19/2009 | #09-01/-02 - 30,000 | 21 | 2166 0/0 | hemorrhagic/loose | |
| | 3058/ | 427/06/01/2009 | #09-01/-02 - 30,000 | 21 | 1666 0/0 | hemorrhagic/loose | Transcriptomics; Fig. 4 |
| | 3086/ | 107/06/06/2009 | #09-01/-02 - 30,000 | 21 | 666 0/0 | mildly hemorrhagic/normal | |
| #173/BARC | 9002 | 20025/02/01/2002 | #01-01 - 3,750 | 53 | 1880 0/0 | | qPCR; Fig 3 |
| | 7714 | 20024/1/22/2002 | #01-01 - 3,750 | 53 | 1410 0/0 | | ND |
| | 7713 | 20024/1/22/2002 | #01-01 - 3,750 | 53 | 6 0/0 | | qPCR; Fig 3 |
| | 7712 | 20024/1/22/2002 | #01-01 - 3,750 | 53 | 2030 0/0 | | qPCR; Fig 3 |
| | 8406 | 20023/1/18/2002 | #01-01 - 3,750 | 53 | 1220 0/0 | | ND |
| | 8205 | 20022/1/16/2002 | #01-01 - 3,750 | 53 | 2 0/0 | | qPCR; Fig 3 |
| | 7719 | 20024/1/22/2002 | #01-01 - 3,750 | 53 | 10 0/0 | | qPCR; Fig 3 |
| | 8202 | 20022/1/16/2002 | #01-01 - 3,750 | 53 | 2000 0/0 | | qPCR; Fig 3 |
| | 8404 | 20022/1/16/2002 | #01-01 - 3,750 | 53 | 1560 0/0 | | ND |
| | 8107 | 20021/1/7/2002 | #01-01 - 3,750 | 53 | 986 0/0 | | ND |

Pig Sex - male (M); female (F); barrow (B)

*indicates worms smaller than average within the group

Ascaris adult females (F) or males (M)

Supplemental Table S3. DEGs in the proximal colon of infected over control pigs at 21 days after inoculation.

| Feature ID | Fold change | EDGE test: FDR p-value correction |
|------------|-------------|-----------------------------------|
| PLA2G2A | -1633.2 | 1.33E-05 |
| OLIG2 | -143.0 | 1.09E-03 |
| ZFP42 | -89.1 | 3.67E-11 |
| DNAH14 | -60.4 | 1.56E-02 |
| COL22A1 | -56.8 | 1.34E-02 |
| ADAM1A | -52.9 | 1.87E-02 |
| ASTL | -49.0 | 2.75E-02 |
| FABP3L2* | -44.6 | 1.84E-04 |
| ABCC4L3 | -23.7 | 8.32E-19 |
| LIPM | -19.0 | 2.62E-02 |
| ZSCAN9 | -18.9 | 4.68E-02 |
| CD40 | -17.7 | 4.10E-02 |
| MIR1279 | -16.9 | 4.50E-05 |
| SLC22A10L3 | -14.0 | 1.75E-03 |
| HOXC9 | -12.3 | 5.27E-03 |
| ABCC4L4 | -12.2 | 7.35E-07 |
| FCER2 | -12.0 | 1.34E-02 |
| AGTR2 | -11.5 | 3.94E-03 |
| ALDOB | -10.6 | 8.40E-19 |
| CCL3L2 | -10.6 | 5.90E-03 |
| MIR1244-1 | -9.7 | 6.08E-03 |
| SLC30A10 | -9.4 | 2.71E-13 |
| OAZ3 | -8.8 | 2.23E-02 |
| SLC14A1 | -7.9 | 9.93E-11 |
| TRPV6 | -7.7 | 1.24E-06 |
| HMGCS2 | -7.2 | 0.00E+00 |
| CD200R1L | -6.9 | 7.81E-03 |
| ABCA8 | -6.8 | 4.42E-10 |
| PHEX | -6.8 | 1.81E-02 |
| ABCA6 | -6.4 | 3.40E-08 |
| CXCL9 | -6.1 | 7.08E-08 |
| CCR9 | -5.8 | 1.14E-02 |
| CXCL13 | -5.8 | 5.77E-08 |
| COL6A6 | -5.7 | 3.51E-08 |
| COL25A1 | -5.6 | 7.28E-04 |
| AGT | -5.6 | 1.62E-05 |
| S100G | -5.6 | 3.09E-05 |
| CCL3L1 | -5.6 | 2.84E-03 |
| ABCA9 | -5.5 | 3.06E-08 |
| MOGAT2 | -5.4 | 8.78E-03 |
| AICDA | -5.3 | 8.16E-04 |
| CR2 | -5.2 | 3.00E-14 |
| FCRL1 | -5.0 | 1.34E-02 |
| SLC24A4 | -4.9 | 8.53E-03 |
| CYP26B1 | -4.8 | 9.76E-03 |

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|-----------|------|----------|
| MUSK | -4.8 | 5.12E-05 |
| ZNF354B | -4.7 | 1.05E-02 |
| PDK4 | -4.6 | 5.99E-03 |
| PLIN1 | -4.3 | 4.50E-05 |
| CD5L | -4.2 | 2.41E-02 |
| GPR174 | -4.1 | 4.81E-08 |
| HAS3 | -4.0 | 4.07E-05 |
| TNFSF11 | -4.0 | 1.83E-03 |
| CYP1B1 | -3.9 | 2.93E-04 |
| IDO1 | -3.8 | 6.52E-05 |
| FCRLA | -3.8 | 3.49E-02 |
| NR1H4 | -3.7 | 1.44E-02 |
| SLC7A3L7* | -3.6 | 4.06E-04 |
| CLEC17A | -3.6 | 4.30E-03 |
| ABCG2 | -3.5 | 9.73E-07 |
| SLC25A53 | -3.5 | 2.19E-02 |
| NXPE2 | -3.4 | 2.01E-03 |
| KLRK1 | -3.4 | 6.23E-09 |
| ABCC4L2 | -3.4 | 2.05E-10 |
| MAMDC2 | -3.4 | 3.09E-05 |
| GHR | -3.4 | 2.10E-05 |
| ART3 | -3.3 | 3.07E-02 |
| PNLIPRP2 | -3.3 | 7.77E-06 |
| ADORA3 | -3.3 | 5.03E-03 |
| GCNT4 | -3.3 | 6.50E-03 |
| AQP8 | -3.3 | 3.30E-04 |
| XCL1 | -3.3 | 3.63E-03 |
| AGTR1 | -3.2 | 6.35E-04 |
| ABCA13 | -3.2 | 3.49E-02 |
| PF4 | -3.2 | 1.71E-02 |
| CD28 | -3.2 | 1.08E-02 |
| CLCA4 | -3.1 | 1.16E-02 |
| FBXO32 | -3.1 | 9.94E-05 |
| ABI3BP | -3.0 | 8.43E-06 |
| DDIT4L | -3.0 | 2.84E-04 |
| EDIL3 | -3.0 | 3.93E-07 |
| CR1 | -3.0 | 1.86E-02 |
| CHRM2 | -3.0 | 7.15E-03 |
| LY9L1* | -3.0 | 1.09E-02 |
| SNORA32 | -3.0 | 1.95E-02 |
| KLF12 | -2.9 | 1.06E-03 |
| CHP2 | -2.9 | 1.12E-05 |
| PAX5 | -2.8 | 2.30E-02 |
| RPL11L | -2.8 | 7.05E-03 |
| CCL8 | -2.8 | 4.24E-02 |
| ASPA | -2.8 | 1.01E-02 |
| NGLY1 | -2.8 | 4.52E-07 |

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|----------|------|----------|
| HDAC9 | -2.7 | 7.28E-04 |
| IL15 | -2.7 | 3.09E-02 |
| AR | -2.7 | 4.53E-02 |
| ADAMTS19 | -2.6 | 1.33E-02 |
| LIFR | -2.6 | 3.03E-05 |
| RHOH | -2.6 | 2.84E-03 |
| HOXD10 | -2.6 | 1.85E-02 |
| NEGR1 | -2.6 | 9.36E-03 |
| ADGRE4 | -2.6 | 1.56E-03 |
| CTBS | -2.5 | 3.96E-02 |
| CELF2 | -2.5 | 4.04E-06 |
| CD1D | -2.5 | 2.89E-03 |
| GPNMB | -2.5 | 3.04E-05 |
| BMP3 | -2.5 | 2.94E-03 |
| SLC26A3 | -2.5 | 8.05E-03 |
| PADI2 | -2.5 | 1.60E-04 |
| TNFSF13B | -2.5 | 2.69E-04 |
| KCNJ2 | -2.5 | 2.94E-04 |
| NT5E | -2.5 | 1.78E-04 |
| DAPK1 | -2.5 | 8.50E-03 |
| PRSS12 | -2.5 | 5.62E-03 |
| SLA-DQB1 | -2.5 | 1.55E-03 |
| BTC | -2.4 | 1.84E-02 |
| LYPD6 | -2.4 | 1.56E-02 |
| SLA-DMB | -2.4 | 3.61E-04 |
| PPFIA4 | -2.4 | 2.68E-02 |
| C4BPAL | -2.4 | 3.78E-02 |
| IPCEF1 | -2.3 | 2.46E-02 |
| DMD | -2.3 | 4.69E-05 |
| C3AR1 | -2.3 | 5.27E-03 |
| KIT | -2.3 | 2.04E-02 |
| PDGFC | -2.3 | 2.70E-03 |
| RPL35A | -2.3 | 1.95E-03 |
| CXCL12 | -2.3 | 5.03E-03 |
| CNTN1 | -2.3 | 2.41E-02 |
| CST3 | -2.3 | 3.93E-04 |
| GPR82 | -2.2 | 1.35E-02 |
| AHRR | -2.2 | 2.98E-02 |
| LPXN | -2.2 | 1.56E-03 |
| SLC16A1 | -2.2 | 1.59E-03 |
| PTPN7 | -2.2 | 1.83E-03 |
| EGLN3 | -2.2 | 1.65E-03 |
| CD4 | -2.2 | 1.61E-02 |
| ADIPOQ | -2.2 | 4.06E-03 |
| ADAMTS5 | -2.2 | 1.84E-02 |
| APH1B | -2.2 | 3.53E-02 |
| TMTC1 | -2.2 | 2.39E-02 |

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| SESN3 | -2.2 | 5.41E-04 |
| CHL1 | -2.2 | 1.49E-02 |
| SMAD9 | -2.2 | 3.79E-04 |
| ZNF672 | -2.1 | 1.41E-02 |
| TLR8 | -2.1 | 1.41E-02 |
| PGM5 | -2.1 | 8.60E-04 |
| DTNA | -2.1 | 2.37E-02 |
| MPEG1 | -2.1 | 7.99E-03 |
| SLC8A1 | -2.1 | 2.28E-03 |
| CD302 | -2.1 | 6.84E-03 |
| CD3G | -2.1 | 8.80E-03 |
| SLAMF6 | -2.1 | 4.40E-02 |
| HPSE | -2.1 | 4.45E-03 |
| MAF | -2.1 | 1.40E-02 |
| RARRES1 | -2.0 | 2.81E-03 |
| PIK3AP1 | -2.0 | 6.93E-03 |
| PLXNC1 | -2.0 | 1.18E-03 |
| CCL2 | -2.0 | 1.38E-03 |
| ZNF568 | -2.0 | 1.33E-02 |
| FAM65B | -2.0 | 2.68E-02 |
| LRIG2 | -2.0 | 5.03E-03 |
| SDPR | -2.0 | 4.88E-03 |
| SLC22A5 | -2.0 | 4.83E-02 |
| TLR7 | -2.0 | 4.66E-02 |
| RDH10 | -2.0 | 2.25E-02 |
| PCMTD2 | -2.0 | 2.03E-02 |
| CALD1 | -2.0 | 5.64E-03 |
| CYP4V2 | -2.0 | 1.52E-02 |
| COL6A5 | -2.0 | 1.50E-02 |
| SLC4A7 | -2.0 | 2.41E-02 |
| NPL | -1.9 | 2.41E-02 |
| MAFB | -1.9 | 5.99E-03 |
| ABCA1 | -1.9 | 5.62E-03 |
| C5 | -1.9 | 1.14E-02 |
| NFATC2 | -1.9 | 4.03E-02 |
| CD48 | -1.9 | 1.09E-02 |
| LRP12 | -1.9 | 2.33E-02 |
| ALDH6A1 | -1.9 | 5.11E-03 |
| SLC25A3 | -1.9 | 2.19E-02 |
| FGL2 | -1.9 | 2.08E-02 |
| DOCK10 | -1.9 | 1.58E-02 |
| SLA-DMA | -1.9 | 1.99E-02 |
| NREP | -1.9 | 1.71E-02 |
| SATB1 | -1.9 | 1.64E-02 |
| CFL2 | -1.9 | 2.19E-02 |
| CD2 | -1.8 | 9.24E-03 |
| BANK1 | -1.8 | 4.81E-02 |

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| LY9 | -1.8 | 4.79E-02 |
| ERAP1 | -1.8 | 3.18E-02 |
| PPAP2B | -1.8 | 1.44E-02 |
| RBMS1 | -1.8 | 1.68E-02 |
| FRZB | -1.8 | 3.93E-02 |
| DIXDC1 | -1.8 | 2.08E-02 |
| IGJ | -1.8 | 1.92E-02 |
| AHCYL2 | -1.8 | 2.15E-02 |
| IGSF5 | -1.8 | 1.18E-02 |
| SLA-3 | -1.8 | 3.72E-02 |
| ITGAE | -1.8 | 4.27E-02 |
| PTCH1 | -1.8 | 3.72E-02 |
| ITGA4 | -1.7 | 4.03E-02 |
| SCARA5 | -1.7 | 3.55E-02 |
| CDC42EP3 | -1.7 | 4.01E-02 |
| PAG1 | -1.7 | 4.72E-02 |
| SYNE1 | -1.7 | 3.52E-02 |
| KCTD12 | -1.7 | 4.66E-02 |
| CRLF3 | -1.7 | 4.24E-02 |
| COL14A1 | -1.7 | 3.72E-02 |
| MPDZ | -1.7 | 3.53E-02 |
| CYP7B1 | -1.7 | 4.83E-02 |
| CD109 | -1.7 | 4.15E-02 |
| TSPAN7 | -1.7 | 4.78E-02 |
| SEC11C | 1.7 | 4.83E-02 |
| MIF | 1.7 | 4.03E-02 |
| PLA2G16 | 1.8 | 4.03E-02 |
| GLUL | 1.8 | 4.41E-02 |
| SLC35C1 | 1.8 | 4.89E-02 |
| TARS | 1.8 | 3.43E-02 |
| MAZ | 1.8 | 3.53E-02 |
| S100A14 | 1.8 | 2.70E-02 |
| SMARCE1 | 1.8 | 1.98E-02 |
| SERPINB8 | 1.8 | 2.66E-02 |
| FOXA1 | 1.8 | 3.01E-02 |
| PIK3C2A | 1.8 | 2.22E-02 |
| PMPCA | 1.8 | 3.50E-02 |
| WDR1 | 1.9 | 4.04E-02 |
| MIR1282 | 1.9 | 2.53E-02 |
| CFL1 | 1.9 | 4.46E-02 |
| IGFBP5 | 1.9 | 2.01E-02 |
| MCF2L | 1.9 | 1.98E-02 |
| PRTFDC1 | 1.9 | 1.86E-02 |
| NDUFA6 | 1.9 | 1.39E-02 |
| DDX54 | 1.9 | 4.32E-02 |
| MRPL51 | 1.9 | 1.72E-02 |
| LSS | 1.9 | 3.03E-02 |

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| LRRC59 | 1.9 | 3.60E-02 |
| MKI67 | 1.9 | 1.58E-02 |
| SUMO4 | 1.9 | 3.77E-02 |
| STARD10 | 1.9 | 1.91E-02 |
| BOLA2 | 1.9 | 2.95E-02 |
| PSMB7 | 1.9 | 7.05E-03 |
| SLC39A7 | 1.9 | 9.92E-03 |
| MAGOH | 1.9 | 1.71E-02 |
| PTN | 1.9 | 1.03E-02 |
| CNOT3 | 2.0 | 3.50E-02 |
| CENPJ | 2.0 | 4.45E-02 |
| SKA2 | 2.0 | 9.87E-03 |
| ATOH1 | 2.0 | 2.41E-02 |
| HSD11B1 | 2.0 | 2.19E-02 |
| SMPDL3B | 2.0 | 1.67E-02 |
| FDPS | 2.0 | 3.53E-02 |
| SERPINB6 | 2.0 | 1.67E-02 |
| TIMM17A | 2.0 | 1.40E-02 |
| SLC25A1 | 2.0 | 4.03E-02 |
| CXCL16 | 2.0 | 2.89E-03 |
| LRRC8A | 2.0 | 1.64E-02 |
| SEMA7A | 2.1 | 2.41E-02 |
| PSTPIP2 | 2.1 | 5.66E-03 |
| GADD45B | 2.1 | 4.75E-02 |
| SMAGP | 2.1 | 4.78E-02 |
| ARHGDI1 | 2.1 | 1.87E-02 |
| HDLBP | 2.1 | 1.81E-02 |
| UAP1L1 | 2.1 | 1.98E-02 |
| ERN2 | 2.1 | 1.54E-02 |
| DPP9 | 2.1 | 5.03E-03 |
| TGM2 | 2.2 | 7.15E-03 |
| SERPINB5 | 2.2 | 1.56E-03 |
| PYCR1 | 2.2 | 4.03E-02 |
| BCL3 | 2.2 | 2.84E-03 |
| PKM | 2.2 | 2.62E-02 |
| DPRX | 2.2 | 1.71E-02 |
| TRAPPC6A | 2.2 | 4.81E-02 |
| TUBA1C | 2.2 | 3.01E-02 |
| TMEM54 | 2.2 | 1.11E-02 |
| CDH1 | 2.2 | 3.28E-03 |
| AREG | 2.2 | 8.37E-03 |
| ROS1 | 2.2 | 8.87E-04 |
| RIPK3 | 2.3 | 1.33E-02 |
| UBE2S | 2.3 | 2.19E-02 |
| CCNB2 | 2.3 | 3.45E-04 |
| ADAMTS1 | 2.3 | 4.06E-04 |
| B3GNT6 | 2.3 | 7.21E-03 |

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| ABCA12 | 2.3 | 4.40E-02 |
| CABIN1 | 2.3 | 1.96E-03 |
| FFAR4 | 2.3 | 2.68E-02 |
| MYBL2 | 2.4 | 3.34E-03 |
| P2RX4 | 2.4 | 8.14E-04 |
| CYP2B22 | 2.4 | 4.65E-02 |
| ND1 | 2.4 | 1.59E-03 |
| LIPH | 2.4 | 1.88E-04 |
| TACC3 | 2.4 | 6.84E-03 |
| DEPDC7 | 2.4 | 3.67E-02 |
| GCNT3 | 2.4 | 4.06E-04 |
| IL1A | 2.4 | 1.55E-03 |
| HMGA1 | 2.4 | 5.03E-03 |
| FAM20C | 2.4 | 2.79E-02 |
| BGN | 2.5 | 1.81E-02 |
| HSPA1L | 2.5 | 4.83E-02 |
| PFKFB3 | 2.5 | 7.15E-03 |
| GALNT6 | 2.5 | 5.55E-03 |
| TNFRSF26 | 2.5 | 2.44E-02 |
| NT5DC2 | 2.5 | 2.37E-02 |
| CSRP2 | 2.5 | 1.20E-02 |
| PTPRN2 | 2.5 | 3.72E-02 |
| BIRC5 | 2.6 | 1.37E-03 |
| KCNE3 | 2.6 | 3.51E-05 |
| FGF7 | 2.6 | 5.67E-04 |
| TUBB3 | 2.6 | 2.11E-03 |
| ITGB6 | 2.6 | 7.63E-03 |
| GSTA1 | 2.7 | 4.73E-02 |
| CDX1 | 2.7 | 1.73E-03 |
| PNP | 2.7 | 1.83E-03 |
| KCNJ11 | 2.7 | 3.31E-02 |
| TPSB2 | 2.8 | 2.68E-02 |
| RRBP1 | 2.8 | 8.06E-05 |
| PHLDA2 | 2.8 | 2.79E-03 |
| MDK | 2.8 | 4.44E-04 |
| FCN2 | 2.9 | 9.94E-05 |
| CAPNS2 | 2.9 | 2.12E-03 |
| PLA2G3 | 2.9 | 4.90E-03 |
| SPDEF | 3.0 | 1.13E-04 |
| BPIFB2 | 3.0 | 3.18E-02 |
| LAMB3 | 3.0 | 6.87E-04 |
| ME1 | 3.1 | 9.19E-03 |
| FUT2 | 3.1 | 1.38E-03 |
| F3 | 3.1 | 4.09E-05 |
| ETV4 | 3.1 | 4.03E-02 |
| ABAT | 3.2 | 1.73E-05 |
| SLC7A5 | 3.3 | 1.30E-03 |

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| FABP3 | 3.3 | 3.51E-08 |
| HK2 | 3.3 | 1.33E-05 |
| STEAP4 | 3.4 | 5.33E-03 |
| CLDN8 | 3.5 | 1.41E-02 |
| CLCA1 | 3.5 | 9.80E-09 |
| PRKCG | 3.5 | 4.38E-02 |
| SERPINB10 | 3.5 | 2.87E-04 |
| DIO2 | 3.5 | 1.15E-03 |
| DNAH8 | 3.7 | 3.59E-02 |
| IGFBP4 | 3.7 | 6.25E-07 |
| TNFSF18 | 3.8 | 3.17E-02 |
| NRG1 | 3.8 | 2.41E-02 |
| TIMP1 | 3.9 | 2.94E-04 |
| LOC396756 | 4.0 | 1.51E-06 |
| PTGS2 | 4.0 | 1.30E-07 |
| TNFRSF8 | 4.0 | 2.04E-02 |
| SLC9C1 | 4.1 | 7.81E-04 |
| CHI3L2 | 4.2 | 4.97E-04 |
| GNMT | 4.3 | 2.10E-02 |
| AKR1C4 | 4.3 | 2.30E-05 |
| SLC7A11 | 4.3 | 6.75E-07 |
| TLE6 | 4.4 | 1.34E-02 |
| CXCL14 | 4.4 | 2.73E-06 |
| PDZK1IP1L | 4.5 | 1.44E-02 |
| CXCL17 | 4.5 | 7.44E-06 |
| TNIP3 | 4.5 | 5.90E-06 |
| BAALC | 4.5 | 3.96E-03 |
| BDKRB1 | 4.6 | 1.70E-02 |
| PI3 | 4.6 | 2.55E-08 |
| KRT18 | 4.7 | 7.48E-10 |
| SAPCD2 | 4.7 | 1.19E-03 |
| PLAUR | 4.8 | 6.11E-06 |
| SLPI | 4.8 | 2.22E-11 |
| COL28A1 | 4.9 | 5.31E-06 |
| MMP3 | 4.9 | 3.31E-10 |
| PHGDH | 5.0 | 9.01E-04 |
| IL17C | 5.0 | 7.15E-03 |
| SLC5A8 | 5.0 | 1.13E-04 |
| GSTA2 | 5.4 | 4.30E-03 |
| BTN1A1L2* | 5.4 | 2.54E-02 |
| CA4 | 5.5 | 9.51E-10 |
| CBS | 5.5 | 7.18E-05 |
| AGR2 | 5.6 | 1.73E-11 |
| SDS | 5.7 | 8.06E-05 |
| MIR6087 | 6.0 | 1.14E-02 |
| IL1R2 | 6.1 | 1.51E-06 |
| MUC2 | 6.3 | 2.16E-16 |

| | | |
|------------|-------|----------|
| CHI3L1 | 6.4 | 1.03E-13 |
| B3GNT7 | 6.4 | 1.16E-05 |
| UPK1B | 6.5 | 1.59E-03 |
| TAT | 6.9 | 3.49E-02 |
| GSTP1L2* | 6.9 | 3.53E-02 |
| RNF39 | 7.0 | 1.51E-06 |
| IL36A | 7.2 | 2.58E-03 |
| MMP1 | 7.3 | 6.53E-13 |
| TCN1 | 8.0 | 1.44E-10 |
| SPINK4 | 8.1 | 9.43E-22 |
| S100A8 | 8.2 | 1.02E-02 |
| MPTX | 8.3 | 4.03E-15 |
| SERPINB11 | 8.4 | 7.38E-04 |
| SLCO1A2 | 8.6 | 6.00E-04 |
| SP6 | 9.3 | 1.01E-02 |
| HCAR2 | 9.3 | 6.76E-05 |
| MMP9 | 9.3 | 1.00E-02 |
| ADAM30 | 9.6 | 8.58E-03 |
| MMP12 | 9.7 | 4.45E-16 |
| S100A9 | 9.8 | 1.83E-03 |
| TGM3 | 10.0 | 3.03E-05 |
| S100A2 | 10.0 | 3.03E-27 |
| REG4 | 11.1 | 8.84E-20 |
| IGHG1 | 11.1 | 3.80E-06 |
| HTR1B | 11.8 | 2.40E-02 |
| GYS2 | 11.9 | 5.62E-03 |
| S100A12 | 12.8 | 4.09E-05 |
| PDZK1IP1* | 13.6 | 1.24E-05 |
| AKR1C1 | 13.8 | 3.93E-07 |
| GABRP | 15.7 | 1.59E-03 |
| A2ML1 | 16.0 | 2.14E-03 |
| SERPINB2 | 16.2 | 4.90E-32 |
| SLC6A2 | 18.7 | 1.53E-02 |
| PSAT1 | 20.6 | 4.69E-11 |
| IL11 | 21.6 | 6.84E-03 |
| TFF1 | 25.9 | 2.62E-06 |
| MMP13 | 27.5 | 9.71E-29 |
| ARG1 | 30.1 | 2.28E-07 |
| IL36B | 30.8 | 1.02E-02 |
| ANXA8 | 34.8 | 6.97E-40 |
| TFF2 | 37.1 | 6.93E-10 |
| MMP7 | 53.1 | 4.09E-05 |
| IFITM1L3* | 63.2 | 1.59E-02 |
| HOXB13 | 132.7 | 1.59E-02 |
| SLC7A3L11* | 188.2 | 1.59E-03 |
| IL4I1L | 437.7 | 1.59E-14 |

Supplemental Table S4. Comparison of pigs at 52 days after inoculation with no worms compared to control uninfected pigs

| Feature ID | FC Naive vs Infection No Worms | EDGE test: FDR p-value correction |
|------------|--------------------------------|-----------------------------------|
| LCN15 | -32.1 | 3.66E-07 |
| ALPI | -4.9 | 5.20E-03 |
| CD5L | -4.7 | 6.80E-03 |
| PON1 | -4.5 | 4.13E-02 |
| SLC10A2 | -4.3 | 4.13E-02 |
| SDR9C7 | -4.2 | 2.26E-02 |
| CYP2B22 | -3.9 | 2.23E-02 |
| ACSL6 | -3.7 | 9.52E-03 |
| GSTA2 | -3.6 | 5.23E-02 |
| GDF5 | -3.3 | 1.09E-03 |
| SCNN1B | -3.3 | 2.26E-02 |
| ALPIL1 | -3.1 | 3.58E-02 |
| GAL | -3.1 | 1.57E-02 |
| PCK1 | -3.1 | 1.86E-02 |
| PDK4 | -3.0 | 3.61E-02 |
| NCR1 | -2.9 | 2.48E-04 |
| SLC24A1 | -2.9 | 1.16E-03 |
| RDH16 | -2.8 | 4.89E-02 |
| ACE2 | -2.6 | 4.67E-02 |
| SLC38A4 | -2.6 | 5.46E-04 |
| VGF | -2.6 | 2.96E-03 |
| ANPEP | -2.5 | 4.13E-02 |
| GPIHBP1 | -2.5 | 3.06E-02 |
| NCR2 | -2.5 | 4.13E-02 |
| TREM2 | -2.5 | 4.89E-02 |
| GPR162 | -2.3 | 3.71E-02 |
| NKPD1 | -2.3 | 2.48E-03 |
| NR1H4 | -2.3 | 2.51E-02 |
| EOMES | -2.2 | 3.65E-02 |
| THNSL2 | -2.2 | 2.04E-04 |
| CIRBP | -2.1 | 6.57E-05 |
| KLRD1L* | -2.1 | 2.36E-02 |
| ANGPTL4 | -2.0 | 4.70E-02 |
| CA12 | -2.0 | 3.03E-03 |
| KLF11 | -2.0 | 4.37E-02 |
| SIRPB2 | -2.0 | 3.09E-02 |
| GSTM1 | -1.9 | 9.10E-03 |
| SMIM6 | -1.9 | 4.13E-02 |
| GSTM4 | -1.8 | 5.07E-03 |
| GSTT1 | -1.8 | 4.13E-02 |
| PYCARD | -1.8 | 1.54E-02 |
| SLC24A4 | -1.8 | 4.67E-02 |
| SLC46A3 | -1.8 | 2.05E-03 |
| BDH1 | -1.7 | 5.79E-03 |
| CD8A | -1.7 | 5.31E-02 |
| CES1B* | -1.7 | 7.07E-03 |
| CLEC3B | -1.7 | 7.15E-03 |
| H1F0 | -1.7 | 6.99E-03 |
| KCNE3 | -1.7 | 1.16E-03 |
| METTL7A | -1.7 | 3.83E-03 |
| SLC16A14 | -1.7 | 1.09E-02 |
| THAP8 | -1.7 | 4.86E-02 |
| A1CF | -1.6 | 1.73E-02 |
| ADGRE4 | -1.6 | 2.26E-02 |
| C1QB | -1.6 | 5.22E-02 |
| GSTZ1 | -1.6 | 1.03E-02 |
| PDK2 | -1.6 | 1.50E-02 |
| PLCD1 | -1.6 | 1.46E-02 |

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|-----------|------|----------|
| PNPLA2 | -1.6 | 1.01E-02 |
| SLC43A2 | -1.6 | 2.36E-02 |
| TMEM140 | -1.6 | 1.73E-02 |
| UGT2C1* | -1.6 | 4.13E-02 |
| COQ8A | -1.5 | 1.73E-02 |
| ARRDC3 | -1.5 | 4.39E-02 |
| FDXR | -1.5 | 2.76E-02 |
| HADHA | -1.5 | 1.16E-03 |
| ODC1 | -1.5 | 1.27E-02 |
| SULT1B1 | -1.5 | 3.48E-02 |
| TSPAN7 | -1.5 | 3.87E-02 |
| SNX19 | 1.5 | 3.48E-02 |
| RASA2 | 1.5 | 8.65E-03 |
| SKIL | 1.5 | 1.47E-02 |
| SLC12A4 | 1.5 | 1.59E-03 |
| EPAS1 | 1.5 | 1.29E-02 |
| HSPA2 | 1.6 | 5.31E-02 |
| COL12A1 | 1.6 | 4.13E-02 |
| PRDM2 | 1.6 | 7.04E-03 |
| GJA1 | 1.7 | 4.40E-02 |
| APOBR | 1.7 | 3.48E-02 |
| SAMSN1 | 1.7 | 1.85E-02 |
| PIK3C2A | 1.7 | 5.31E-02 |
| CD33 | 1.7 | 2.79E-02 |
| AOAH | 1.7 | 2.02E-02 |
| PTGS1 | 1.7 | 6.80E-03 |
| CDR2 | 1.7 | 1.47E-02 |
| ANKRD12 | 1.7 | 2.76E-02 |
| HYOU1 | 1.7 | 1.73E-02 |
| NFIL3 | 1.7 | 1.50E-04 |
| SERPINH1 | 1.8 | 4.70E-02 |
| GRAP | 1.8 | 2.00E-02 |
| SLC26A2 | 1.8 | 5.24E-02 |
| CHORDC1 | 1.8 | 8.64E-03 |
| GPR68 | 1.8 | 6.99E-03 |
| LPCAT2 | 1.9 | 2.33E-03 |
| GPR65 | 1.9 | 3.09E-02 |
| HSPA5 | 1.9 | 2.26E-02 |
| ALOX5AP | 2.0 | 3.09E-02 |
| NOV | 2.0 | 3.48E-02 |
| TNFRSF12A | 2.0 | 2.26E-02 |
| DOCK2 | 2.0 | 7.80E-03 |
| GATA2 | 2.0 | 5.31E-02 |
| COL8A1 | 2.0 | 3.85E-02 |
| SFRP1 | 2.1 | 2.80E-03 |
| DNAJA1 | 2.1 | 5.20E-03 |
| SLCO4A1 | 2.1 | 1.73E-02 |
| F13A1 | 2.1 | 7.07E-03 |
| CD69 | 2.1 | 4.85E-03 |
| SRGN | 2.1 | 1.18E-05 |
| ARNTL2 | 2.1 | 3.38E-02 |
| GFI1 | 2.2 | 1.03E-02 |
| RUNX3 | 2.2 | 5.12E-03 |
| IGHE | 2.3 | 4.86E-02 |
| KIT | 2.3 | 1.73E-02 |
| IPCEF1 | 2.4 | 1.03E-02 |
| SLC16A3 | 2.4 | 2.50E-03 |
| CD244 | 2.4 | 1.29E-02 |
| NLRC3 | 2.5 | 1.97E-02 |
| SELE | 2.5 | 3.53E-02 |

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|-----------|-------|----------|
| MAP4K1 | 2.5 | 2.73E-04 |
| GZMAL | 2.5 | 1.01E-02 |
| TDRP1 | 2.6 | 5.04E-03 |
| HSPA1L | 2.6 | 5.31E-02 |
| SLC2A3 | 2.7 | 1.71E-10 |
| HSPH1 | 2.7 | 1.29E-02 |
| HDC | 2.7 | 2.39E-02 |
| GPR97 | 2.8 | 2.26E-02 |
| FGR | 2.8 | 6.51E-07 |
| LTC4S | 2.8 | 1.24E-02 |
| TIGIT | 2.8 | 3.39E-04 |
| CSF2RAL | 2.9 | 4.86E-02 |
| GZMA | 3.0 | 4.54E-04 |
| CXCL6 | 3.1 | 1.01E-02 |
| MMP9 | 3.4 | 3.03E-03 |
| SH2D1B | 3.5 | 4.91E-04 |
| FFAR2 | 3.6 | 1.18E-05 |
| TIAM1 | 4.4 | 6.67E-08 |
| GATA3 | 4.4 | 4.43E-04 |
| IGFBP2 | 4.7 | 1.99E-08 |
| SLC5A8 | 4.8 | 3.38E-02 |
| GPRC5D | 4.8 | 9.86E-03 |
| DFNB31 | 4.9 | 7.93E-05 |
| DIO2 | 5.8 | 1.16E-03 |
| NXPH4 | 5.8 | 2.70E-06 |
| TKTL1 | 6.4 | 1.49E-02 |
| SLC4A11 | 6.9 | 1.04E-03 |
| CTSG | 7.2 | 8.45E-07 |
| MMP12 | 7.3 | 1.09E-03 |
| KLRJ1* | 9.6 | 1.59E-03 |
| SNORA73AL | 10.4 | 2.01E-02 |
| NTRK1 | 10.6 | 3.53E-03 |
| GZMB | 11.2 | 8.54E-08 |
| TCN1 | 19.2 | 1.29E-02 |
| TNN | 83.7 | 5.30E-05 |
| GNLY | 132.0 | 2.98E-11 |
| REG3A | 168.9 | 2.26E-02 |

Supplemental Table S5. Comparison of DEGs expressed in the proximal colon of pigs at 52 days after inoculation with worms compared to uninfected controls.

| Gene | Fold change | EDGE FDR p-value |
|----------|-------------|------------------|
| SLC10A2 | -1285.8 | 8.30E-08 |
| ALPI | -159.7 | 2.09E-10 |
| EVX1 | -38.1 | 2.47E-02 |
| ASTL | -37.2 | 2.34E-02 |
| CLCA4 | -27.9 | 1.34E-07 |
| ALDOB | -27.7 | 2.35E-07 |
| GSTA2 | -26.6 | 8.94E-06 |
| CYP2B22 | -26.4 | 2.38E-06 |
| BTNL2 | -21.7 | 9.02E-03 |
| HMGCS2 | -21.2 | 0.00E+00 |
| NXPE2 | -20.1 | 2.40E-06 |
| NR1H4 | -17.1 | 2.31E-11 |
| PCK1 | -16.9 | 1.62E-07 |
| FRMD1 | -15.5 | 9.59E-05 |
| OASL | -14.4 | 5.68E-03 |
| SLC14A1 | -13.9 | 1.46E-02 |
| FOXO6 | -13.7 | 8.20E-06 |
| AQP8 | -13.7 | 2.47E-03 |
| SLC26A3 | -12.7 | 8.30E-08 |
| NCR2 | -12.1 | 1.81E-05 |
| CD5L | -10.9 | 8.19E-04 |
| THAP12 | -10.5 | 4.27E-02 |
| ALPIL1* | -10.3 | 1.67E-04 |
| SLC30A10 | -10.2 | 3.00E-03 |
| SDR9C7 | -9.3 | 8.99E-03 |
| MOGAT2 | -9.2 | 1.14E-03 |
| AGT | -8.7 | 1.64E-05 |
| PADI2 | -8.6 | 1.42E-09 |
| GRIK1 | -8.6 | 4.27E-02 |
| HAS3 | -8.4 | 9.20E-06 |
| SULT1E1 | -8.2 | 1.08E-09 |
| SI | -7.9 | 8.57E-03 |
| SLC25A34 | -7.8 | 1.41E-09 |
| COL6A6 | -7.8 | 1.07E-07 |
| SLC38A4 | -7.7 | 3.14E-09 |
| PDK4 | -7.7 | 2.11E-04 |
| LCN15 | -7.6 | 4.90E-02 |
| ABCG2 | -7.6 | 6.40E-07 |
| CXCL9 | -7.5 | 6.02E-04 |
| CEACAM8 | -7.5 | 1.20E-02 |
| NCR1 | -7.2 | 1.19E-06 |
| SLC51A | -6.9 | 2.76E-08 |
| P2RX3 | -6.5 | 3.20E-05 |
| ABCA6 | -6.5 | 3.05E-06 |
| GUCA2A | -6.3 | 2.26E-05 |
| TM6SF2 | -6.3 | 2.26E-14 |
| CA12 | -6.2 | 4.33E-13 |
| DNAI1 | -6.1 | 1.42E-02 |
| RDH16 | -6.1 | 3.20E-03 |
| TRPV6 | -6.0 | 4.34E-02 |
| IFI27 | -5.8 | 7.91E-04 |
| SSTR5 | -5.7 | 4.20E-03 |
| SLC16A1 | -5.7 | 0.00E+00 |
| CA1 | -5.6 | 4.33E-12 |
| CCL3L2 | -5.4 | 6.08E-03 |
| GABRB2 | -5.4 | 4.12E-06 |
| GPIHBP1 | -5.3 | 6.94E-04 |
| ANPEP | -5.2 | 3.11E-04 |
| XCL1 | -5.2 | 1.96E-06 |
| CYP26B1 | -5.0 | 2.61E-08 |
| IGF2-AS | -5.0 | 1.71E-02 |
| OPRL1 | -4.9 | 3.95E-04 |
| PIPOX | -4.9 | 6.45E-03 |
| EOMES | -4.8 | 1.12E-04 |
| FOXJ1 | -4.8 | 4.62E-03 |
| CXCL11 | -4.8 | 3.33E-02 |
| IL12B | -4.7 | 1.02E-02 |
| CLEC4F | -4.6 | 4.26E-02 |
| DACT2 | -4.6 | 4.67E-02 |
| EDN3 | -4.6 | 7.22E-03 |
| SLC24A4 | -4.4 | 2.68E-06 |
| RSAD2 | -4.4 | 2.06E-02 |

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| SELENBP1 | -4.4 | 1.11E-11 |
| ADIPOQ | -4.2 | 5.00E-04 |
| CD207 | -4.2 | 4.37E-02 |
| KLF11 | -4.2 | 3.47E-05 |
| CHP2 | -4.1 | 1.38E-07 |
| UGT2C1* | -4.1 | 8.74E-11 |
| DLX4 | -4.1 | 2.69E-03 |
| ABCA8 | -4.1 | 3.01E-03 |
| CLDN10 | -4.1 | 3.30E-03 |
| PLIN1 | -4.0 | 3.06E-02 |
| PARP15 | -4.0 | 3.90E-04 |
| GZMK | -4.0 | 1.31E-02 |
| SCNN1B | -3.8 | 3.19E-02 |
| GPR162 | -3.8 | 1.31E-03 |
| WNT8B | -3.8 | 2.30E-04 |
| DLX3 | -3.8 | 2.11E-02 |
| GDF5 | -3.8 | 1.25E-02 |
| FOXS1 | -3.8 | 3.26E-05 |
| FABP1 | -3.7 | 5.00E-05 |
| KLRD1L | -3.7 | 1.90E-04 |
| HSD17B6 | -3.7 | 1.19E-02 |
| CD36 | -3.7 | 8.88E-09 |
| CIDEA | -3.6 | 1.99E-03 |
| CTBS | -3.6 | 8.38E-03 |
| SLC25A42 | -3.6 | 1.96E-06 |
| RNF112 | -3.5 | 1.01E-03 |
| VIP | -3.5 | 5.68E-03 |
| CNTFR | -3.5 | 4.40E-04 |
| IRF4L | -3.4 | 5.23E-03 |
| SIGLEC15 | -3.4 | 5.06E-02 |
| CXCL10 | -3.4 | 3.22E-02 |
| SECTM1 | -3.4 | 1.23E-03 |
| ZBP1 | -3.4 | 5.56E-04 |
| DHX58 | -3.3 | 7.59E-03 |
| SELENOP | -3.3 | 2.97E-08 |
| ISX | -3.3 | 2.28E-03 |
| IGF2 | -3.2 | 5.66E-04 |
| PRSS12 | -3.2 | 1.43E-04 |
| XAF1 | -3.2 | 5.31E-02 |
| ABI3BP | -3.2 | 4.50E-05 |
| SLC30A3 | -3.1 | 8.38E-03 |
| LYPD6 | -3.1 | 7.55E-03 |
| CLCA4L | -3.1 | 1.92E-02 |
| SLC7A8 | -3.1 | 2.76E-05 |
| NECAB2 | -3.1 | 1.88E-02 |
| GSTM1 | -3.0 | 2.39E-05 |
| AOC1 | -3.0 | 3.91E-07 |
| ABCA9 | -3.0 | 3.15E-02 |
| GAL | -3.0 | 4.97E-02 |
| CCR9 | -3.0 | 5.47E-02 |
| ASPA | -2.9 | 4.20E-03 |
| ANGPTL4 | -2.9 | 1.19E-03 |
| GSTM4 | -2.9 | 3.46E-06 |
| IFI44 | -2.9 | 1.80E-02 |
| PRDX6 | -2.9 | 1.45E-07 |
| SLC35D3 | -2.9 | 3.46E-02 |
| BDH1 | -2.9 | 4.31E-08 |
| TMPRSS13 | -2.8 | 1.67E-02 |
| CARD14 | -2.8 | 6.03E-05 |
| AHRR | -2.8 | 3.02E-04 |
| FBXO32 | -2.8 | 1.02E-04 |
| SIRPB2 | -2.8 | 6.49E-03 |
| CD209 | -2.8 | 1.42E-03 |
| SLC46A3 | -2.8 | 2.40E-06 |
| ACSBG1 | -2.8 | 4.00E-02 |
| SLC7A3L6 | -2.8 | 1.70E-02 |
| CD4 | -2.8 | 1.41E-04 |
| CXCL12 | -2.7 | 6.31E-04 |
| NMRAL1L* | -2.7 | 1.81E-02 |
| FAAH | -2.7 | 6.61E-04 |
| UGT1A3 | -2.7 | 2.57E-02 |
| CA11 | -2.7 | 7.55E-03 |
| FABP4 | -2.7 | 1.86E-02 |
| NGB | -2.7 | 3.12E-02 |

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| ZFP84L | -2.7 | 3.53E-03 |
| ABCB4 | -2.7 | 2.10E-02 |
| LRP1B | -2.7 | 1.12E-02 |
| MAOA | -2.7 | 1.11E-07 |
| LILRB3L4 | -2.7 | 2.84E-02 |
| MAMDC2 | -2.7 | 2.50E-03 |
| WNT11 | -2.7 | 1.51E-02 |
| GRIK4 | -2.7 | 1.76E-02 |
| SLC8A2 | -2.7 | 2.11E-02 |
| PTPRD | -2.6 | 1.41E-04 |
| ACE | -2.6 | 7.25E-05 |
| SLC7A3L4 | -2.6 | 4.44E-03 |
| TXNIP | -2.6 | 5.39E-05 |
| GBP6 | -2.6 | 5.25E-03 |
| GSTT1 | -2.6 | 1.25E-03 |
| AURKC | -2.6 | 3.68E-03 |
| UBE2L6 | -2.6 | 1.15E-04 |
| P2RY13 | -2.6 | 6.61E-04 |
| ADGRB1 | -2.6 | 1.64E-02 |
| IFITM1 | -2.6 | 1.45E-02 |
| C1QB | -2.6 | 4.13E-05 |
| C11orf86 | -2.5 | 4.92E-04 |
| SULT1C4 | -2.5 | 1.40E-04 |
| CD74 | -2.5 | 2.92E-04 |
| ZKSCAN2 | -2.5 | 4.12E-02 |
| KLRC1 | -2.5 | 2.35E-02 |
| CIRBP | -2.5 | 3.91E-05 |
| IL34 | -2.5 | 3.63E-04 |
| ADGRE4 | -2.4 | 9.29E-06 |
| GBP2 | -2.4 | 1.02E-02 |
| AHCYL2 | -2.4 | 5.80E-06 |
| SLC7A3L7 | -2.4 | 3.11E-02 |
| SCARA5 | -2.4 | 2.08E-02 |
| DBP | -2.4 | 3.71E-03 |
| PLCD1 | -2.4 | 1.77E-06 |
| GBP4 | -2.4 | 4.83E-02 |
| COL4A3 | -2.4 | 4.44E-02 |
| SLA-DRA | -2.4 | 1.06E-03 |
| ADGB | -2.4 | 3.63E-02 |
| TMPRSS2 | -2.4 | 1.23E-04 |
| SLA-DOA | -2.4 | 3.71E-03 |
| TMEM140 | -2.4 | 2.01E-06 |
| CCL4 | -2.4 | 1.16E-02 |
| APOL2 | -2.4 | 1.75E-04 |
| RBP5 | -2.4 | 5.79E-03 |
| PNPLA2 | -2.4 | 1.05E-06 |
| ANK3 | -2.4 | 8.67E-03 |
| TLR8 | -2.3 | 1.46E-03 |
| C1QA | -2.3 | 4.91E-05 |
| ANKH | -2.3 | 7.37E-03 |
| C1QC | -2.3 | 5.39E-05 |
| SLC39A5 | -2.3 | 3.63E-02 |
| IL12RB2 | -2.3 | 4.34E-02 |
| TUBAL3 | -2.3 | 3.93E-02 |
| CD83 | -2.3 | 1.40E-02 |
| IHH | -2.3 | 3.41E-05 |
| THNSL2 | -2.3 | 1.15E-03 |
| HAPLN4 | -2.3 | 1.17E-04 |
| SLA-3 | -2.3 | 1.89E-04 |
| ADRB1 | -2.3 | 1.40E-03 |
| VEGF | -2.3 | 3.28E-02 |
| IFITM1L2* | -2.3 | 6.10E-05 |
| SLC46A2 | -2.3 | 6.48E-03 |
| HOXD10 | -2.3 | 8.74E-03 |
| IFI44L | -2.3 | 3.75E-03 |
| SLA-11 | -2.3 | 1.08E-04 |
| PCSK6 | -2.3 | 1.07E-05 |
| CD300H | -2.3 | 1.10E-05 |
| LOC106509843 | -2.3 | 1.93E-02 |
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| SLA-DQB1 | -2.3 | 1.13E-02 |
| CD36L1 | -2.3 | 2.24E-03 |
| ABCC6 | -2.2 | 4.92E-02 |
| MAF | -2.2 | 1.08E-04 |

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| RETSAT | -2.2 | 4.10E-06 |
| FCGR3A | -2.2 | 8.60E-05 |
| LGALS9 | -2.2 | 2.92E-04 |
| SLA-DMB | -2.2 | 8.10E-04 |
| CD8A | -2.2 | 4.54E-03 |
| ZNF419 | -2.2 | 3.82E-02 |
| CD300C | -2.2 | 5.26E-03 |
| LTBP4 | -2.2 | 9.11E-05 |
| CD27 | -2.2 | 4.87E-02 |
| PTPRO | -2.2 | 3.59E-02 |
| EDIL3 | -2.2 | 2.93E-03 |
| CD7 | -2.2 | 4.61E-02 |
| ABCB1 | -2.2 | 2.05E-03 |
| PARP9 | -2.2 | 1.66E-04 |
| SLA-DRB1 | -2.2 | 5.60E-03 |
| PTCH1 | -2.2 | 1.80E-03 |
| EFNA3 | -2.2 | 2.20E-02 |
| TSPAN7 | -2.2 | 5.07E-06 |
| TST | -2.2 | 3.80E-05 |
| TLR1 | -2.2 | 8.67E-04 |
| CXCR3 | -2.2 | 1.38E-02 |
| CYP7B1 | -2.2 | 9.83E-03 |
| COQ8A | -2.2 | 9.79E-06 |
| MPEG1 | -2.2 | 4.93E-03 |
| KLHL7 | -2.1 | 2.73E-04 |
| NT5E | -2.1 | 1.30E-02 |
| CES1B | -2.1 | 5.66E-04 |
| P2RY12 | -2.1 | 5.25E-02 |
| ACSF2 | -2.1 | 6.81E-06 |
| NKPD1 | -2.1 | 4.23E-02 |
| LY9L1* | -2.1 | 4.13E-03 |
| CYP2C91 | -2.1 | 5.29E-02 |
| CDKN2B | -2.1 | 1.87E-04 |
| H1FO | -2.1 | 7.02E-04 |
| LOC110255453 | -2.1 | 4.34E-02 |
| FOXH1 | -2.1 | 3.28E-02 |
| ADAMTSL5 | -2.1 | 3.76E-02 |
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| ABCB6 | -2.1 | 2.65E-05 |
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| PARP14 | -2.1 | 1.16E-02 |
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| LIFR | -2.1 | 4.05E-04 |
| SLC25A20 | -2.1 | 1.13E-04 |
| SLC25A27 | -2.1 | 1.55E-05 |
| METTL7A | -2.1 | 1.05E-04 |
| SLA-DMA | -2.1 | 4.61E-03 |
| CTSD | -2.1 | 3.64E-04 |
| ZNF548 | -2.1 | 1.71E-02 |
| TMPRSS4 | -2.1 | 4.56E-05 |
| PLCB2 | -2.0 | 1.74E-03 |
| MLYCD | -2.0 | 1.50E-03 |
| CECR1 | -2.0 | 4.20E-03 |
| CSMD1 | -2.0 | 3.76E-02 |
| AMT | -2.0 | 3.33E-04 |
| GFRA1 | -2.0 | 4.61E-02 |
| CPT1A | -2.0 | 2.94E-03 |
| KLRG1 | -2.0 | 5.07E-02 |
| WNT2B | -2.0 | 3.42E-03 |
| PFKFB4 | -2.0 | 4.11E-05 |
| COBL | -2.0 | 2.96E-06 |
| EXOC3L4 | -2.0 | 4.81E-04 |
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| MMP11 | -2.0 | 7.40E-04 |
| LAIR1 | -2.0 | 7.37E-03 |
| TLR5 | -2.0 | 4.03E-02 |
| CDH23 | -2.0 | 4.71E-02 |
| B2M | -2.0 | 5.66E-04 |
| MDK | -2.0 | 1.75E-02 |
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| NADK | -2.0 | 5.86E-05 |
| TLR6 | -2.0 | 4.77E-03 |

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| EBI3 | -2.0 | 4.52E-02 |
| FBXW10 | -2.0 | 2.07E-02 |
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| LGALS3BP | -1.9 | 3.18E-02 |
| TSPAN11 | -1.9 | 4.35E-03 |
| SLC25A38 | -1.9 | 4.57E-04 |
| RGS10 | -1.9 | 2.55E-02 |
| OSBPL10 | -1.9 | 6.89E-03 |
| ZNF664 | -1.9 | 6.81E-05 |
| TAP1 | -1.9 | 5.73E-03 |
| CSTA | -1.9 | 2.56E-02 |
| PYCARD | -1.9 | 8.72E-03 |
| NCAM1 | -1.9 | 3.06E-02 |
| TCF7L1 | -1.9 | 2.24E-02 |
| BSG | -1.9 | 1.92E-04 |
| ADHFE1 | -1.9 | 4.54E-02 |
| PIK3IP1 | -1.9 | 1.62E-03 |
| PGF | -1.9 | 4.93E-02 |
| THAP8 | -1.9 | 4.60E-02 |
| ITIH5 | -1.9 | 1.46E-02 |
| IL10RA | -1.9 | 8.53E-04 |
| CLEC3B | -1.9 | 2.18E-03 |
| GLI2 | -1.9 | 3.33E-02 |
| ERBB2 | -1.9 | 1.33E-03 |
| SDPR | -1.9 | 1.59E-02 |
| MT-CO3 | -1.9 | 4.64E-03 |
| SPIDR | -1.9 | 2.85E-04 |
| OGDH | -1.9 | 8.27E-05 |
| NOXO1 | -1.9 | 1.71E-03 |
| PDK2 | -1.9 | 1.11E-03 |
| TRANK1 | -1.9 | 1.91E-02 |
| TEF | -1.9 | 3.52E-03 |
| SLC25A29 | -1.9 | 1.01E-02 |
| GIMAP8 | -1.9 | 1.74E-03 |
| CD302 | -1.9 | 9.28E-03 |
| AKR1E2 | -1.9 | 3.20E-03 |
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| SYNPO | -1.8 | 7.65E-03 |
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| FGFRL1 | -1.8 | 8.75E-03 |
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| SLC45A4 | -1.8 | 1.06E-03 |
| GRINA | -1.8 | 1.50E-03 |
| SLC43A2 | -1.8 | 2.00E-03 |
| RGL1 | -1.8 | 1.84E-03 |
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| MEIS2 | -1.8 | 4.81E-02 |
| CD300LF | -1.8 | 5.14E-02 |
| MTCP1 | -1.8 | 4.83E-02 |
| RNF213 | -1.8 | 4.61E-02 |
| ZNF709L5* | -1.8 | 4.65E-02 |
| UCP2 | -1.8 | 7.55E-03 |
| SNX4 | -1.8 | 7.26E-04 |
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| PHACTR1 | -1.8 | 6.57E-03 |
| HSD17B1 | -1.8 | 4.04E-02 |
| CLCN2 | -1.8 | 4.79E-05 |
| CCR5 | -1.8 | 5.37E-03 |
| CYP27A1 | -1.8 | 3.99E-02 |
| PAX8 | -1.8 | 3.67E-02 |
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| ADA | -1.8 | 1.88E-02 |
| RALGDS | -1.8 | 2.82E-03 |
| TNFAIP2 | -1.8 | 2.30E-04 |
| TESK2 | -1.8 | 5.66E-03 |
| ASAP3 | -1.8 | 3.44E-03 |

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| SULT1B1 | -1.8 | 1.20E-03 |
| PSMB10 | -1.8 | 3.20E-03 |
| SOWAHA | -1.8 | 2.63E-03 |
| SLC25A10 | -1.8 | 2.22E-04 |
| MMP25 | -1.8 | 1.15E-02 |
| IRF9 | -1.8 | 5.24E-03 |
| CD72 | -1.8 | 4.52E-02 |
| EGFLAM | -1.8 | 2.10E-02 |
| VAMP2 | -1.8 | 1.77E-03 |
| GABBR1 | -1.8 | 2.17E-03 |
| FLT3LG | -1.8 | 3.71E-03 |
| ADCY9 | -1.8 | 1.41E-04 |
| MTHFR | -1.8 | 7.98E-03 |
| GPR34 | -1.8 | 2.92E-02 |
| GSTP1 | -1.8 | 7.59E-03 |
| TCF21 | -1.8 | 4.67E-03 |
| SLC7A3L2 | -1.8 | 4.24E-04 |
| SCIN | -1.8 | 3.67E-02 |
| GABARAPL1 | -1.8 | 6.54E-04 |
| ADCY5 | -1.8 | 4.38E-02 |
| ACY1 | -1.7 | 9.49E-03 |
| PRAG1 | -1.7 | 1.02E-02 |
| ALDH6A1 | -1.7 | 1.15E-02 |
| DOCK6 | -1.7 | 4.13E-03 |
| MT-ATP6 | -1.7 | 1.36E-02 |
| TSKU | -1.7 | 3.98E-02 |
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| HSDL2 | -1.7 | 7.04E-04 |
| JAML | -1.7 | 2.72E-02 |
| PLTP | -1.7 | 1.75E-02 |
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| UGT1A10 | -1.7 | 6.00E-04 |
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| MOV10 | -1.7 | 1.22E-03 |
| MERTK | -1.7 | 7.59E-03 |
| N4BP2L1 | -1.7 | 5.30E-02 |
| AXIN2 | -1.7 | 3.42E-02 |
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| CSF1R | -1.7 | 3.70E-03 |
| CD68L1 | -1.7 | 1.16E-02 |
| MT-CO1 | -1.7 | 7.42E-03 |
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| LCP2 | -1.7 | 7.46E-03 |
| CCL21 | -1.7 | 4.86E-02 |
| VDR | -1.7 | 7.90E-03 |
| ACADS | -1.7 | 2.96E-03 |
| APOE | -1.7 | 3.18E-02 |
| LIPE | -1.7 | 3.48E-02 |
| PARP3 | -1.7 | 3.15E-02 |
| ZNF362 | -1.7 | 7.88E-03 |
| MICALCL | -1.7 | 2.78E-02 |
| DTX3 | -1.7 | 4.85E-03 |
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| CRIP1 | -1.7 | 2.87E-02 |
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| DISP1 | -1.6 | 4.68E-03 |
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| SPPL2B | -1.6 | 7.40E-04 |
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| ERAP2 | -1.6 | 4.60E-02 |
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| ACADSB | -1.6 | 1.66E-03 |
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| TAP2 | -1.6 | 1.31E-02 |

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| HGSNAT | -1.6 | 1.40E-02 |
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| COL4A6 | -1.6 | 3.19E-02 |
| PPARD | -1.6 | 4.85E-03 |
| NAAA | -1.6 | 3.53E-02 |
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| PNPLA7 | -1.6 | 4.92E-03 |
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| THRA | -1.6 | 2.58E-02 |
| HS1BP3 | -1.6 | 1.12E-02 |
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| HDAC10 | -1.6 | 1.78E-03 |
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| NR3C2 | -1.6 | 2.11E-02 |
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| TYROBP | -1.6 | 3.74E-02 |
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| BCAS3 | -1.6 | 2.27E-02 |
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| GMPR | -1.6 | 6.59E-03 |
| LTBP3 | -1.6 | 4.59E-02 |
| CYB5RL | -1.6 | 5.37E-02 |
| ATG4A | -1.6 | 1.45E-02 |
| KLC4 | -1.6 | 4.83E-03 |
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| ERBB3 | -1.6 | 4.43E-02 |
| IVD | -1.6 | 2.32E-02 |
| DHRS11 | -1.6 | 4.77E-03 |
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| PDXK | -1.6 | 9.56E-03 |
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| SCARB2 | -1.6 | 1.71E-03 |
| HOXA5 | -1.6 | 1.74E-02 |
| FBP2 | -1.6 | 1.05E-02 |
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| SLA-8 | -1.6 | 1.98E-02 |
| LRP4 | -1.6 | 2.19E-02 |
| GALNS | -1.6 | 1.45E-02 |
| PNPLA6 | -1.6 | 2.08E-02 |
| ASCC2 | -1.6 | 6.52E-04 |
| FTL | -1.6 | 4.64E-02 |
| MYH14 | -1.6 | 1.75E-02 |
| MNT | -1.6 | 1.51E-02 |
| ACAD11 | -1.6 | 1.82E-02 |
| NOP53 | -1.6 | 9.95E-03 |
| VAR52 | -1.5 | 1.93E-02 |
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| SYNE1 | -1.5 | 4.67E-02 |
| VAV3 | -1.5 | 5.02E-02 |
| SLC9A3R1 | -1.5 | 1.36E-02 |
| FCER1G | -1.5 | 5.31E-02 |
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| TMEM94 | -1.5 | 4.35E-03 |
| MUL1 | -1.5 | 1.04E-02 |
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| TRIM66 | -1.5 | 2.93E-02 |
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| BBS4 | -1.5 | 1.94E-02 |
| CSF1 | -1.5 | 3.58E-02 |
| NT5C3A | -1.5 | 4.41E-02 |
| ACVR1B | -1.5 | 1.73E-02 |
| DIRC2 | -1.5 | 4.91E-02 |

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| SCARF1 | -1.5 | 4.78E-02 |
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| NAV1 | -1.5 | 3.87E-02 |
| CLEC2D | -1.5 | 5.17E-02 |
| DENND6B | -1.5 | 5.10E-02 |
| PCGF2 | -1.5 | 4.54E-02 |
| SESN1 | -1.5 | 2.85E-02 |
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| BFAR | -1.5 | 1.98E-02 |
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| FCGRT | -1.5 | 2.30E-02 |
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| PPARA | -1.5 | 4.14E-02 |
| MAFB | -1.5 | 3.08E-02 |
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| ACOX1 | -1.5 | 1.80E-02 |
| ASPH | 1.5 | 1.62E-02 |
| HM13 | 1.5 | 4.05E-02 |
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| TOR1AIP1 | 1.5 | 9.73E-03 |
| MCF2L | 1.5 | 4.37E-02 |
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| VKORC1L1 | 1.5 | 1.66E-02 |
| ROCK1 | 1.5 | 3.08E-02 |
| SLC39A11 | 1.5 | 5.49E-02 |
| NUP153 | 1.5 | 2.91E-02 |
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| MAP2K1 | 1.5 | 9.07E-03 |
| LRRC8A | 1.5 | 5.45E-02 |
| UBE2N | 1.5 | 3.17E-02 |
| EIF5 | 1.5 | 1.51E-02 |
| ACSL4 | 1.5 | 3.29E-02 |
| MTHFD1 | 1.5 | 1.94E-02 |
| FILIP1L | 1.5 | 5.11E-02 |
| ANP32E | 1.5 | 2.39E-02 |
| PTP4A1 | 1.5 | 4.70E-02 |
| RASA2 | 1.5 | 1.67E-02 |
| FAT1 | 1.5 | 4.34E-02 |
| SUGT1 | 1.5 | 3.17E-02 |
| UBA2 | 1.5 | 1.35E-02 |
| SLC37A3 | 1.5 | 7.96E-03 |
| TSPAN6 | 1.5 | 2.95E-02 |
| YARS | 1.5 | 4.20E-03 |
| ITGB1 | 1.5 | 1.80E-02 |
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| HMG3 | 1.5 | 2.23E-02 |
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| ACKR3 | 1.5 | 4.95E-02 |
| CEP350 | 1.5 | 2.57E-02 |
| SEC16A | 1.5 | 1.69E-02 |
| LTBP1 | 1.5 | 2.73E-02 |
| KPNB1 | 1.5 | 1.97E-02 |
| MESDC1 | 1.5 | 1.49E-02 |
| WDR36 | 1.5 | 2.03E-02 |
| P2RX4 | 1.5 | 4.22E-02 |
| MAGT1 | 1.5 | 2.43E-02 |
| PDE4B | 1.5 | 4.82E-02 |
| DDX18 | 1.5 | 2.76E-02 |

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| CLTC | 1.5 | 3.32E-02 |
| SWAP70 | 1.5 | 2.99E-02 |
| UBR1 | 1.5 | 1.69E-02 |
| ARID3A | 1.5 | 1.18E-02 |
| NOP58 | 1.5 | 4.61E-02 |
| PBRM1 | 1.5 | 3.12E-02 |
| SRPR | 1.5 | 1.16E-02 |
| ZNF827 | 1.5 | 3.66E-02 |
| STARD10 | 1.5 | 3.63E-02 |
| TACC3 | 1.5 | 5.11E-02 |
| MSH2 | 1.5 | 3.64E-02 |
| SLC12A4 | 1.5 | 4.15E-03 |
| SRSF10 | 1.5 | 4.44E-03 |
| MOGS | 1.5 | 5.43E-03 |
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| ASCC3 | 1.5 | 5.12E-02 |
| SLC35C1 | 1.5 | 4.14E-02 |
| PPIA | 1.5 | 1.88E-02 |
| DSC2 | 1.5 | 4.78E-02 |
| GALNT1 | 1.5 | 4.20E-02 |
| MAL2 | 1.5 | 1.07E-02 |
| RAN | 1.5 | 1.47E-02 |
| MANSC1 | 1.5 | 2.58E-02 |
| RACGAP1 | 1.5 | 5.25E-02 |
| CAD | 1.5 | 1.90E-02 |
| HSPA4 | 1.5 | 1.23E-02 |
| ZBTB1 | 1.5 | 3.22E-02 |
| STARD5 | 1.5 | 4.88E-02 |
| SELENOI | 1.5 | 5.04E-03 |
| CCP110 | 1.5 | 2.09E-02 |
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| TMED2 | 1.5 | 1.25E-02 |
| TRIP11 | 1.5 | 1.75E-02 |
| LAMC1 | 1.6 | 2.40E-02 |
| DDX3X | 1.6 | 5.28E-02 |
| ACACA | 1.6 | 4.83E-03 |
| CANX | 1.6 | 2.07E-02 |
| SEC23B | 1.6 | 1.24E-02 |
| BZW1 | 1.6 | 3.18E-02 |
| IDE | 1.6 | 7.53E-03 |
| SELENOF | 1.6 | 1.38E-02 |
| SURF4 | 1.6 | 1.38E-02 |
| APEX1 | 1.6 | 3.94E-03 |
| GOLGA4 | 1.6 | 1.42E-02 |
| PRDM1 | 1.6 | 2.16E-02 |
| TOP2B | 1.6 | 1.38E-02 |
| NUP205 | 1.6 | 2.04E-02 |
| BTAF1 | 1.6 | 1.43E-02 |
| EIF2AK3 | 1.6 | 3.01E-03 |
| ANXA2 | 1.6 | 1.42E-02 |
| BAZ1A | 1.6 | 7.89E-03 |
| PDPN | 1.6 | 4.98E-02 |
| ATF4 | 1.6 | 1.20E-02 |
| AARS | 1.6 | 6.94E-03 |
| SACS | 1.6 | 2.04E-02 |
| SEC61A1 | 1.6 | 9.70E-03 |
| SEL1L3 | 1.6 | 2.74E-02 |
| ZNF281 | 1.6 | 3.22E-03 |
| STK39 | 1.6 | 3.52E-03 |
| FZD6 | 1.6 | 5.05E-02 |
| CLIC2 | 1.6 | 2.84E-02 |
| FUT8 | 1.6 | 5.97E-03 |
| AOAH | 1.6 | 5.28E-02 |
| ENTPD6 | 1.6 | 1.65E-02 |
| WISP1 | 1.6 | 5.23E-02 |
| SEL1L | 1.6 | 4.20E-03 |
| SLC39A10 | 1.6 | 5.43E-02 |
| CASP3 | 1.6 | 2.55E-03 |
| PAWR | 1.6 | 2.76E-04 |
| SERPINB1 | 1.6 | 3.13E-02 |
| ADAMTS7 | 1.6 | 3.54E-02 |
| ERLEC1 | 1.6 | 2.58E-02 |

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| C9 | 1.6 | 3.93E-02 |
| ALDOC | 1.6 | 5.08E-02 |
| PPRC1 | 1.6 | 1.77E-02 |
| MIS18BP1 | 1.6 | 3.18E-02 |
| GOLGA3 | 1.6 | 2.64E-03 |
| IQGAP1 | 1.6 | 6.60E-03 |
| ZMYND19 | 1.6 | 3.44E-02 |
| TUBA1B | 1.6 | 6.88E-03 |
| DOCK7 | 1.6 | 1.37E-02 |
| EPRS | 1.6 | 3.45E-03 |
| CMAS | 1.6 | 1.54E-02 |
| SLC7A1 | 1.6 | 1.25E-02 |
| FLVCR2 | 1.6 | 2.26E-02 |
| PGM2 | 1.6 | 7.93E-03 |
| VLDLR | 1.6 | 1.87E-03 |
| COL5A2 | 1.6 | 1.79E-02 |
| S100A6 | 1.6 | 3.06E-02 |
| AP3S1 | 1.7 | 1.36E-03 |
| PTPN12 | 1.7 | 3.05E-04 |
| CCDC134 | 1.7 | 4.17E-02 |
| FOCAD | 1.7 | 3.14E-03 |
| ABCE1 | 1.7 | 3.69E-03 |
| NAA15 | 1.7 | 1.71E-02 |
| PRKAA2 | 1.7 | 3.44E-02 |
| CARS | 1.7 | 1.99E-03 |
| ARG2 | 1.7 | 3.31E-02 |
| SRP54 | 1.7 | 5.23E-03 |
| SELENOK | 1.7 | 1.33E-03 |
| EIF4E | 1.7 | 8.21E-03 |
| PLA2G4A | 1.7 | 3.82E-02 |
| LTBP2 | 1.7 | 2.28E-02 |
| ARCN1 | 1.7 | 2.11E-03 |
| COPB2 | 1.7 | 6.68E-03 |
| MAPK6 | 1.7 | 1.13E-02 |
| UBE2S | 1.7 | 1.08E-02 |
| P4HA2 | 1.7 | 5.38E-03 |
| CTNNB1 | 1.7 | 3.08E-03 |
| ITGAV | 1.7 | 7.96E-03 |
| CDCA8 | 1.7 | 2.23E-02 |
| ATM | 1.7 | 1.39E-03 |
| AMIGO3 | 1.7 | 2.55E-03 |
| TOPBP1 | 1.7 | 3.75E-03 |
| HSPD1 | 1.7 | 1.25E-02 |
| SLC20A1 | 1.7 | 1.63E-02 |
| GMPPB | 1.7 | 8.21E-03 |
| SOX9 | 1.7 | 1.52E-02 |
| DNAJC25 | 1.7 | 1.46E-02 |
| SLC30A7 | 1.7 | 2.93E-03 |
| AMD1 | 1.7 | 3.24E-03 |
| BRCA2 | 1.7 | 3.63E-02 |
| THY1 | 1.7 | 1.92E-02 |
| SOAT1 | 1.7 | 1.57E-02 |
| BDP1 | 1.7 | 2.88E-03 |
| UFM1 | 1.7 | 5.37E-03 |
| MAP4K4 | 1.7 | 5.24E-04 |
| ADAMTS9 | 1.7 | 4.78E-02 |
| CASC4 | 1.7 | 1.90E-03 |
| RPS6KA3 | 1.7 | 1.07E-03 |
| MAN2A1 | 1.7 | 7.59E-03 |
| SLC2A1 | 1.7 | 7.88E-03 |
| TFPI2 | 1.7 | 5.42E-03 |
| SLC7A6 | 1.7 | 2.15E-03 |
| ATR | 1.7 | 2.92E-02 |
| RPN2 | 1.7 | 7.02E-03 |
| CFI | 1.7 | 4.15E-02 |
| SLC39A7 | 1.7 | 1.29E-03 |
| CBX5 | 1.7 | 9.86E-04 |
| F2RL2 | 1.7 | 1.57E-02 |
| PTGER2 | 1.7 | 1.84E-03 |
| HMMR | 1.7 | 4.64E-02 |
| COPB1 | 1.7 | 7.69E-03 |
| COL4A1 | 1.7 | 1.53E-02 |
| BUB1 | 1.7 | 5.12E-02 |
| E2F7 | 1.7 | 5.49E-02 |

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| C3 | 1.7 | 3.10E-02 |
| TMED5 | 1.7 | 4.92E-04 |
| SPATS2 | 1.7 | 8.34E-04 |
| SAMSN1 | 1.7 | 1.38E-02 |
| TNFRSF11A | 1.7 | 3.61E-02 |
| GALNT6 | 1.7 | 1.20E-02 |
| DUSP5 | 1.7 | 1.26E-02 |
| SPC24 | 1.7 | 5.41E-02 |
| BTG2 | 1.7 | 9.85E-03 |
| TMED10 | 1.7 | 1.41E-04 |
| GRAP | 1.7 | 2.12E-02 |
| TOP2A | 1.7 | 2.46E-02 |
| NSDHL | 1.7 | 4.11E-03 |
| COL6A3 | 1.8 | 3.31E-02 |
| CHORDC1 | 1.8 | 1.47E-02 |
| ADM | 1.8 | 2.21E-02 |
| OSBPL8 | 1.8 | 5.05E-02 |
| SKA2 | 1.8 | 1.91E-02 |
| GARS | 1.8 | 7.19E-04 |
| TIFA | 1.8 | 7.65E-03 |
| STEAP2 | 1.8 | 2.56E-02 |
| ECSCR | 1.8 | 2.28E-02 |
| SLC38A2 | 1.8 | 2.90E-02 |
| NUDCD1 | 1.8 | 6.46E-03 |
| SSR1 | 1.8 | 8.41E-04 |
| TPX2 | 1.8 | 1.13E-02 |
| MTHFD2 | 1.8 | 2.97E-03 |
| TMED7 | 1.8 | 7.76E-04 |
| SC5D | 1.8 | 3.28E-03 |
| MMP19 | 1.8 | 4.54E-02 |
| CCT6A | 1.8 | 4.24E-04 |
| POLE | 1.8 | 9.67E-03 |
| CCND2 | 1.8 | 5.04E-03 |
| CHEK2 | 1.8 | 3.88E-03 |
| TNFSF15 | 1.8 | 2.54E-02 |
| MIS18A | 1.8 | 5.06E-02 |
| SRGN | 1.8 | 2.61E-03 |
| MCTP2 | 1.8 | 1.96E-03 |
| ERN2 | 1.8 | 1.38E-02 |
| FGR | 1.8 | 2.10E-02 |
| PGK1 | 1.8 | 1.24E-03 |
| MARS | 1.8 | 4.34E-05 |
| SLC16A10 | 1.8 | 3.61E-02 |
| SLC3A2 | 1.8 | 1.83E-03 |
| KLF15 | 1.8 | 3.84E-02 |
| ACOT11 | 1.8 | 5.31E-02 |
| CD24 | 1.8 | 4.34E-02 |
| FAM20C | 1.8 | 4.61E-03 |
| KRT80 | 1.8 | 4.15E-02 |
| TNFRSF10B | 1.8 | 3.08E-03 |
| ARF2 | 1.8 | 2.80E-03 |
| SLC30A5 | 1.8 | 1.03E-03 |
| TSPAN12 | 1.8 | 3.52E-04 |
| THBD | 1.8 | 2.09E-02 |
| INTS2 | 1.8 | 3.06E-03 |
| SEC61G | 1.8 | 4.85E-03 |
| DNA2 | 1.8 | 2.59E-02 |
| GADD45A | 1.8 | 2.23E-02 |
| CD69 | 1.8 | 3.37E-02 |
| ARF4 | 1.8 | 1.02E-03 |
| SERP1 | 1.8 | 4.79E-04 |
| SLC1A5 | 1.8 | 8.53E-04 |
| IGJ | 1.8 | 2.63E-02 |
| TSPAN13 | 1.8 | 1.66E-03 |
| IFRD1 | 1.8 | 2.25E-03 |
| CCDC88B | 1.8 | 1.78E-03 |
| SLC6A9 | 1.8 | 1.29E-02 |
| WFS1 | 1.9 | 1.20E-03 |
| KIF5B | 1.9 | 3.90E-03 |
| GNE | 1.9 | 2.36E-03 |
| YARS2 | 1.9 | 2.28E-02 |
| DHCR7 | 1.9 | 3.19E-04 |
| PFKFB2 | 1.9 | 3.58E-02 |
| SELENOM | 1.9 | 2.48E-03 |

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| FDFT1 | 1.9 | 3.52E-04 |
| HMGCR | 1.9 | 1.25E-03 |
| STT3A | 1.9 | 1.19E-03 |
| SULF2 | 1.9 | 2.64E-02 |
| CALR | 1.9 | 2.48E-03 |
| ETV5 | 1.9 | 2.26E-02 |
| CDC25C | 1.9 | 6.70E-03 |
| HSP90AA1 | 1.9 | 2.84E-02 |
| METTL16 | 1.9 | 2.84E-02 |
| PPIB | 1.9 | 7.19E-04 |
| PANK1 | 1.9 | 9.77E-03 |
| CXCR4 | 1.9 | 1.45E-02 |
| SLC23A1 | 1.9 | 3.44E-03 |
| HSPA8 | 1.9 | 3.54E-02 |
| ITGA1 | 1.9 | 3.71E-02 |
| BLM | 1.9 | 1.56E-02 |
| SKIL | 1.9 | 3.19E-05 |
| SERPINB5 | 1.9 | 8.72E-03 |
| DNAJC10 | 1.9 | 4.24E-04 |
| SPRED1 | 1.9 | 3.24E-05 |
| SLC7A2 | 1.9 | 4.15E-02 |
| CD163 | 1.9 | 4.34E-02 |
| DSE | 1.9 | 4.61E-03 |
| EDEM3 | 1.9 | 1.53E-02 |
| LRRC59 | 1.9 | 1.99E-03 |
| ADGRG6 | 1.9 | 2.65E-03 |
| MIA3 | 1.9 | 1.23E-04 |
| PKM | 1.9 | 3.11E-04 |
| ECM1 | 1.9 | 4.06E-03 |
| HELLS | 1.9 | 4.19E-03 |
| GALNT7 | 1.9 | 5.18E-04 |
| MVD | 1.9 | 2.48E-04 |
| RRM2 | 1.9 | 2.76E-04 |
| MCM6 | 1.9 | 3.68E-04 |
| FNDC3B | 1.9 | 4.00E-03 |
| SHMT2 | 2.0 | 2.65E-05 |
| FOXA1 | 2.0 | 6.53E-03 |
| SREBF1 | 2.0 | 1.67E-04 |
| ECT2 | 2.0 | 1.69E-02 |
| SERPINH1 | 2.0 | 7.17E-03 |
| ST7 | 2.0 | 4.61E-03 |
| MMD | 2.0 | 9.89E-04 |
| EDEM1 | 2.0 | 5.13E-05 |
| ABCA5 | 2.0 | 4.93E-03 |
| WNT5A | 2.0 | 2.03E-02 |
| OSMR | 2.0 | 1.41E-04 |
| XBP1 | 2.0 | 2.73E-04 |
| IL17RD | 2.0 | 2.03E-02 |
| DDIT4 | 2.0 | 1.40E-04 |
| ATOX1 | 2.0 | 3.87E-03 |
| AACS | 2.0 | 4.99E-05 |
| RIPK3 | 2.0 | 5.75E-04 |
| ACSL3 | 2.0 | 8.07E-05 |
| BST1 | 2.0 | 9.80E-04 |
| PLSCR4 | 2.0 | 4.20E-03 |
| ASNSD1 | 2.0 | 1.71E-03 |
| KIF23 | 2.0 | 5.38E-03 |
| IL33 | 2.0 | 9.72E-04 |
| PCK2 | 2.0 | 1.77E-03 |
| CYP51A1 | 2.1 | 1.08E-04 |
| TARS | 2.1 | 7.29E-05 |
| SLC35A3 | 2.1 | 3.51E-03 |
| WLS | 2.1 | 7.12E-04 |
| CEBPB | 2.1 | 3.29E-03 |
| CFB | 2.1 | 1.92E-02 |
| WNT9B | 2.1 | 3.98E-02 |
| SEC24D | 2.1 | 2.38E-06 |
| DNAJA1 | 2.1 | 4.93E-03 |
| SEC11C | 2.1 | 2.82E-04 |
| ANKRD12 | 2.1 | 1.18E-03 |
| RRBP1 | 2.1 | 1.96E-04 |
| COL12A1 | 2.1 | 1.41E-04 |
| MEST | 2.1 | 4.67E-02 |
| TMED3 | 2.1 | 3.45E-03 |

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| AFF2 | 2.1 | 2.84E-02 |
| PGM3 | 2.1 | 7.37E-05 |
| GPR19 | 2.1 | 2.11E-02 |
| COL7A1 | 2.1 | 1.26E-03 |
| ADGRE2 | 2.1 | 2.00E-02 |
| ANXA5 | 2.1 | 1.44E-05 |
| CDH1 | 2.1 | 1.78E-04 |
| PROCR | 2.1 | 1.02E-02 |
| SELENOS | 2.1 | 1.21E-05 |
| FASN | 2.1 | 1.09E-04 |
| DNAJC3 | 2.1 | 2.07E-05 |
| CD14 | 2.1 | 1.23E-02 |
| PIK3C2A | 2.1 | 1.70E-03 |
| CTGF | 2.1 | 2.04E-02 |
| AREG | 2.1 | 2.09E-02 |
| IRF4 | 2.1 | 2.55E-03 |
| CSRP2 | 2.1 | 1.90E-04 |
| ZGRF1 | 2.1 | 7.88E-03 |
| TMEM38B | 2.1 | 1.48E-03 |
| ACLY | 2.2 | 5.17E-06 |
| SLC41A2 | 2.2 | 5.17E-02 |
| GINS1 | 2.2 | 2.93E-03 |
| STC1 | 2.2 | 1.42E-02 |
| KIAA0101 | 2.2 | 1.07E-03 |
| LSS | 2.2 | 1.54E-05 |
| FICD | 2.2 | 1.96E-04 |
| PANK3 | 2.2 | 4.27E-02 |
| DEPDC1 | 2.2 | 2.26E-02 |
| MYOF | 2.2 | 3.03E-05 |
| CD79A | 2.2 | 1.05E-02 |
| SLC5A1 | 2.2 | 2.73E-04 |
| LIPH | 2.2 | 2.78E-04 |
| FDPS | 2.2 | 8.28E-05 |
| TNFRSF26 | 2.2 | 5.68E-04 |
| GFPT1 | 2.2 | 1.21E-05 |
| SLC17A9 | 2.2 | 1.07E-05 |
| DERL3 | 2.2 | 2.74E-04 |
| DIAPH3 | 2.2 | 2.40E-02 |
| SH2D1B | 2.2 | 5.04E-02 |
| CDR2 | 2.2 | 1.11E-04 |
| LOXL4 | 2.2 | 3.47E-02 |
| ADM5 | 2.2 | 5.60E-03 |
| ITGA8 | 2.2 | 1.15E-04 |
| OLFM4 | 2.2 | 1.48E-02 |
| TGM2 | 2.2 | 3.66E-05 |
| SPDL1 | 2.3 | 2.87E-02 |
| KNL1 | 2.3 | 4.26E-03 |
| FCGBP | 2.3 | 2.08E-02 |
| IL18 | 2.3 | 7.08E-03 |
| PHLDA1 | 2.3 | 3.66E-04 |
| TNFAIP6 | 2.3 | 2.84E-02 |
| VSTM1 | 2.3 | 1.95E-02 |
| PTGER1 | 2.3 | 1.21E-02 |
| PTGS1 | 2.3 | 9.54E-06 |
| GPBR1 | 2.3 | 1.39E-02 |
| FFAR4 | 2.3 | 1.81E-02 |
| MKX | 2.3 | 2.40E-02 |
| HYOU1 | 2.3 | 4.56E-05 |
| HSD11B1 | 2.3 | 7.62E-03 |
| PDIA4 | 2.3 | 1.15E-04 |
| CCL28 | 2.3 | 4.92E-03 |
| CHIA | 2.3 | 3.56E-02 |
| BCAT1 | 2.4 | 4.81E-04 |
| PTPRN2 | 2.4 | 2.45E-02 |
| ADAM32 | 2.4 | 1.08E-02 |
| DEPDC7 | 2.4 | 4.79E-02 |
| SFRP1 | 2.4 | 2.73E-04 |
| SMOC2 | 2.4 | 3.44E-03 |
| SCNN1D | 2.4 | 1.45E-02 |
| PDZK1IP1L | 2.4 | 4.24E-02 |
| GJA1 | 2.4 | 6.11E-05 |
| BMP7 | 2.4 | 6.17E-05 |
| HIF1A | 2.4 | 9.56E-06 |
| SLC15A2 | 2.4 | 2.11E-03 |

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| NFIL3 | 2.4 | 3.14E-09 |
| CDK1 | 2.4 | 1.89E-03 |
| TNFRSF6B | 2.4 | 4.77E-03 |
| FGF2 | 2.4 | 5.70E-04 |
| TRIB3 | 2.4 | 1.05E-02 |
| CHEK1 | 2.4 | 3.35E-03 |
| AHNAK2 | 2.4 | 4.81E-02 |
| NDUFA4L2 | 2.4 | 1.77E-03 |
| FADS1 | 2.4 | 6.98E-08 |
| TIGIT | 2.5 | 3.55E-03 |
| ATF5 | 2.5 | 2.26E-02 |
| GABRD | 2.5 | 4.65E-02 |
| FOS | 2.5 | 2.09E-02 |
| PRDX4 | 2.5 | 3.41E-05 |
| ATP13A3 | 2.5 | 7.31E-03 |
| IFIT1L1 | 2.5 | 3.82E-02 |
| HSPH1 | 2.5 | 1.97E-02 |
| SLC1A4 | 2.5 | 1.36E-03 |
| LMAN1 | 2.5 | 3.59E-06 |
| SHCBP1 | 2.5 | 1.06E-03 |
| AHSA2 | 2.5 | 3.80E-05 |
| MSMO1 | 2.5 | 5.94E-06 |
| SMC2 | 2.5 | 1.70E-04 |
| "MARCH3" | 2.5 | 5.78E-04 |
| SNORA63 | 2.5 | 4.32E-02 |
| SOCS3 | 2.5 | 1.07E-03 |
| LAMB3 | 2.5 | 2.26E-06 |
| CCR2 | 2.5 | 2.63E-03 |
| EGF | 2.5 | 1.10E-03 |
| SLC16A3 | 2.6 | 1.23E-03 |
| EBP | 2.6 | 1.17E-05 |
| NT5DC2 | 2.6 | 1.65E-05 |
| ADAM9 | 2.6 | 1.62E-07 |
| RBPJL | 2.6 | 1.02E-02 |
| ROS1 | 2.6 | 3.77E-02 |
| ITGA2 | 2.6 | 3.66E-05 |
| ADAMTS4 | 2.6 | 4.92E-03 |
| IGFBP4 | 2.6 | 2.53E-05 |
| KRT18 | 2.6 | 4.34E-05 |
| LOC102161685 | 2.7 | 3.95E-04 |
| MYBL1 | 2.7 | 2.28E-02 |
| BDNF | 2.7 | 1.64E-02 |
| HSD17B7 | 2.7 | 9.57E-06 |
| PPP2R5E | 2.7 | 2.55E-02 |
| HSP90B1 | 2.7 | 1.17E-05 |
| ELOVL6 | 2.7 | 1.65E-05 |
| SNCA | 2.7 | 1.40E-02 |
| SLC7A5 | 2.7 | 7.21E-06 |
| ABAT | 2.7 | 2.61E-02 |
| CSF3R | 2.7 | 1.81E-02 |
| TFF3 | 2.7 | 2.49E-03 |
| MANF | 2.7 | 6.81E-06 |
| CXCR1 | 2.7 | 1.71E-02 |
| IGLL5L | 2.7 | 7.30E-03 |
| SERPINB8 | 2.7 | 2.47E-05 |
| GCNT3 | 2.7 | 1.21E-03 |
| PNP | 2.8 | 6.81E-06 |
| FADS2 | 2.8 | 2.38E-06 |
| PHLDA2 | 2.8 | 4.07E-04 |
| TFRC | 2.8 | 3.47E-05 |
| SPHK1 | 2.8 | 3.05E-03 |
| STARD4 | 2.8 | 1.65E-06 |
| GPAT3 | 2.8 | 1.40E-04 |
| CXCR2 | 2.8 | 2.64E-02 |
| LDLR | 2.8 | 1.77E-06 |
| UGGT1 | 2.9 | 5.68E-03 |
| TNC | 2.9 | 8.70E-04 |
| SQLE | 2.9 | 7.52E-07 |
| CXCL1 | 2.9 | 1.56E-02 |
| ETV4 | 2.9 | 3.43E-04 |
| ADAM20L2 | 2.9 | 2.39E-05 |
| IL1RAP | 2.9 | 2.14E-03 |
| SNORA20E | 2.9 | 4.65E-02 |
| LCN2 | 3.0 | 1.80E-02 |

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| BAALC | 3.0 | 5.32E-04 |
| SEMA7A | 3.0 | 1.23E-05 |
| MIR9829 | 3.0 | 5.30E-02 |
| SLC1A2 | 3.0 | 2.04E-03 |
| TLE6 | 3.0 | 6.63E-03 |
| FFAR2 | 3.0 | 5.18E-04 |
| SHISA8 | 3.0 | 2.45E-02 |
| HSPA5 | 3.0 | 1.21E-05 |
| B3GNT6 | 3.0 | 2.31E-03 |
| SLCO4A1 | 3.1 | 7.29E-05 |
| SERPINE2 | 3.1 | 1.06E-04 |
| DHRS9 | 3.1 | 4.24E-04 |
| IDI1 | 3.1 | 3.39E-06 |
| INSIG1 | 3.1 | 6.97E-07 |
| C4BPB | 3.1 | 5.70E-06 |
| FGF7 | 3.2 | 4.44E-05 |
| CLCA1 | 3.2 | 1.07E-03 |
| PFKFB3 | 3.2 | 4.64E-06 |
| IL13RA2 | 3.3 | 5.25E-02 |
| POU2AF1 | 3.3 | 9.54E-06 |
| CTSG | 3.3 | 1.58E-02 |
| NKX2-2 | 3.3 | 5.22E-03 |
| CBS | 3.4 | 1.61E-03 |
| SLC2A3 | 3.4 | 1.42E-12 |
| CXCL8 | 3.4 | 5.32E-04 |
| MMP3 | 3.5 | 3.34E-02 |
| ACAT2 | 3.5 | 1.27E-10 |
| SLC12A8 | 3.5 | 7.40E-04 |
| CXCL14 | 3.5 | 9.85E-08 |
| SPHKAP | 3.5 | 8.66E-04 |
| TIAM1 | 3.5 | 2.62E-05 |
| RAET1EL3 | 3.6 | 4.51E-03 |
| SYNE4 | 3.6 | 2.31E-02 |
| PLA2G3 | 3.6 | 7.51E-05 |
| ITLN2L* | 3.6 | 2.78E-02 |
| CLEC10A | 3.6 | 2.24E-02 |
| HHIPL1 | 3.6 | 1.65E-05 |
| IL1A | 3.6 | 1.30E-03 |
| CMAH | 3.7 | 4.42E-02 |
| MYOM3 | 3.7 | 1.26E-03 |
| GPRC5D | 3.7 | 4.11E-02 |
| KLRG2 | 3.7 | 4.54E-02 |
| MED12L | 3.8 | 5.39E-05 |
| TGM1 | 3.8 | 3.08E-02 |
| ARNTL2 | 3.8 | 6.51E-06 |
| HMGCS1 | 3.9 | 7.11E-09 |
| SCD | 3.9 | 9.81E-07 |
| SHANK2 | 3.9 | 1.44E-03 |
| MS4A7 | 3.9 | 2.55E-03 |
| WNT2 | 3.9 | 6.32E-03 |
| LIPG | 4.0 | 1.77E-03 |
| STEAP4 | 4.0 | 5.38E-03 |
| BDKRB1 | 4.0 | 1.65E-03 |
| COL8A1 | 4.1 | 1.19E-06 |
| HEPHL1 | 4.1 | 5.31E-02 |
| ABCA12 | 4.1 | 1.91E-03 |
| IL26 | 4.1 | 2.96E-03 |
| SFTPD | 4.1 | 2.73E-02 |
| ADAM12 | 4.2 | 4.78E-04 |
| TAT | 4.2 | 4.00E-02 |
| CA4 | 4.3 | 9.18E-05 |
| TIMP1 | 4.3 | 2.48E-09 |
| NRG1 | 4.3 | 8.21E-05 |
| LRP2 | 4.3 | 1.38E-02 |
| C4BPA | 4.3 | 1.37E-03 |
| P4HA3 | 4.4 | 3.89E-04 |
| SPDEF | 4.4 | 3.89E-06 |
| OSM | 4.4 | 1.92E-04 |
| F13A1 | 4.4 | 1.41E-09 |
| WAP1 | 4.4 | 5.33E-03 |
| KIAA1199 | 4.6 | 4.92E-03 |
| IGFBP2 | 4.6 | 3.68E-07 |
| PLAUR | 4.6 | 3.65E-06 |
| TNFRSF11B | 4.6 | 1.51E-04 |

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| RN7SL1 | 4.6 | 2.45E-02 |
| ANKRD26L3 | 4.6 | 3.02E-02 |
| CAPNS2 | 4.7 | 3.43E-04 |
| COL28A1 | 4.7 | 5.24E-04 |
| SERPINA1 | 4.7 | 5.81E-03 |
| PI3 | 4.7 | 1.63E-02 |
| SLC4A11 | 4.8 | 5.93E-03 |
| RNF39 | 4.8 | 2.65E-05 |
| IGHE | 5.0 | 2.59E-06 |
| TNFRSF12A | 5.0 | 6.86E-10 |
| CENPE | 5.0 | 4.28E-03 |
| PHGDH | 5.1 | 3.92E-05 |
| CCL23 | 5.1 | 1.56E-04 |
| NPPC | 5.1 | 3.89E-03 |
| MUC2 | 5.2 | 7.10E-08 |
| CXCL6 | 5.3 | 2.39E-05 |
| AQP9 | 5.3 | 1.56E-02 |
| ITGB6 | 5.4 | 8.74E-11 |
| IL1B | 5.5 | 1.20E-03 |
| GZMB | 5.5 | 2.79E-04 |
| SDS | 5.6 | 1.53E-02 |
| NXPH4 | 5.6 | 3.16E-05 |
| NEUROG3 | 5.7 | 1.61E-03 |
| IGH@ | 5.7 | 2.70E-05 |
| MPTX | 5.8 | 4.12E-06 |
| CHI3L2 | 6.0 | 7.37E-04 |
| ADAM20L6 | 6.1 | 2.85E-02 |
| TREM1 | 6.4 | 4.61E-03 |
| SLC6A13 | 6.5 | 1.54E-02 |
| AGR2 | 6.5 | 1.79E-05 |
| IL6 | 6.5 | 1.29E-04 |
| PTGS2 | 6.5 | 8.39E-06 |
| DIO2 | 6.5 | 3.02E-04 |
| SPINK4 | 6.6 | 2.11E-06 |
| ADAMTS16 | 6.6 | 2.55E-03 |
| BPIFB2 | 6.7 | 2.43E-03 |
| AKR1C1 | 7.0 | 5.11E-02 |
| C1QL2 | 7.0 | 4.51E-02 |
| CRLF1 | 7.1 | 3.16E-05 |
| PSAT1 | 7.2 | 3.12E-04 |
| TNIP3 | 7.3 | 4.56E-05 |
| MCPT3* | 7.3 | 2.80E-02 |
| COL26A1 | 7.3 | 2.71E-04 |
| HOXD1 | 7.4 | 6.83E-03 |
| S100A2 | 7.4 | 9.54E-06 |
| MMP20 | 7.4 | 4.14E-02 |
| ADM2 | 7.9 | 1.29E-05 |
| S100A3 | 8.0 | 6.29E-03 |
| RHCG | 8.0 | 4.93E-02 |
| FAM71E2 | 8.2 | 9.06E-03 |
| F3 | 8.2 | 7.74E-11 |
| HK2 | 8.6 | 2.40E-06 |
| SCGB3A1 | 8.8 | 1.90E-02 |
| MMP9 | 8.9 | 1.02E-08 |
| MMP1 | 9.4 | 4.44E-05 |
| SERPINB2 | 9.8 | 2.12E-04 |
| SNORA20 | 9.8 | 2.20E-03 |
| SLC7A11 | 9.9 | 9.13E-04 |
| KLRJ1 | 10.0 | 5.18E-04 |
| RETNLB | 10.1 | 2.14E-03 |
| IL1R2 | 10.3 | 2.46E-06 |
| SNORA73AL | 10.5 | 2.14E-02 |
| PRG4 | 10.7 | 1.39E-02 |
| UPK1B | 10.9 | 1.66E-08 |
| PADI4 | 11.0 | 7.93E-03 |
| BPIFB6 | 11.0 | 4.32E-02 |
| SERPINB11 | 11.3 | 9.04E-04 |
| PCSK9 | 11.5 | 5.33E-09 |
| SLC5A8 | 11.9 | 4.56E-05 |
| CYP7A1 | 12.7 | 4.64E-02 |
| LYZ | 13.0 | 7.77E-03 |
| HCAR2 | 13.3 | 7.26E-04 |
| SULT2A1 | 13.4 | 4.28E-02 |
| CLEC4D | 13.4 | 4.10E-02 |

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| CHI3L1 | 13.9 | 2.38E-06 |
| REG4 | 15.8 | 2.97E-08 |
| MAGEA13P | 15.8 | 1.76E-02 |
| MCHR1 | 17.9 | 7.59E-03 |
| SERPINB7 | 19.3 | 1.85E-02 |
| IL11 | 19.4 | 3.58E-04 |
| MMP13 | 20.2 | 1.77E-06 |
| ANXA8 | 21.8 | 2.21E-07 |
| IL36A | 22.7 | 3.90E-04 |
| XDH | 22.8 | 3.03E-02 |
| CHIT1 | 24.2 | 1.65E-02 |
| TFF2 | 25.1 | 3.57E-02 |
| MMP8 | 27.1 | 7.94E-03 |
| CLDN9 | 27.7 | 5.43E-02 |
| IGHG1 | 29.1 | 1.93E-04 |
| CLEC18A | 29.5 | 7.94E-03 |
| MMP7 | 33.4 | 3.22E-03 |
| AQP5 | 33.5 | 4.54E-04 |
| S100A8 | 38.3 | 5.18E-04 |
| S100A12 | 38.4 | 4.48E-04 |
| SDSL | 39.6 | 1.38E-02 |
| A3GALT2 | 40.6 | 5.54E-03 |
| NTRK1 | 42.0 | 2.62E-07 |
| S100A9 | 44.8 | 2.59E-04 |
| SPINK6 | 46.2 | 5.38E-03 |
| LTF | 52.9 | 5.95E-03 |
| TCN1 | 54.1 | 1.15E-04 |
| PADI3 | 55.7 | 1.75E-02 |
| SERPINA3-2 | 60.8 | 2.96E-06 |
| TNN | 61.3 | 4.18E-05 |
| AVPR1B | 62.6 | 5.42E-03 |
| GNLY | 68.8 | 2.42E-09 |
| MMP12 | 101.0 | 2.26E-14 |
| SCGB2A2 | 105.1 | 3.14E-07 |
| ARG1 | 122.6 | 4.56E-05 |
| IL4I1L | 161.2 | 3.98E-05 |
| REG3A | 275.6 | 2.48E-03 |
| PADI1 | 296.4 | 3.51E-03 |
| TFF1 | 705.1 | 2.48E-05 |

Supplemental Table S6. Comparison of DEGs expressed at 52 days after inoculation in pigs infected with *Trichuris suis* with no worms (worm-free) versus those with worm.

| Feature ID | Fold change | EDGE test: FDR p-value correction |
|------------|-------------|-----------------------------------|
| SLC10A2 | -297.1 | 1.18E-04 |
| ALPI | -32.9 | 4.94E-06 |
| ALDOB | -21.0 | 1.66E-06 |
| BTNL2 | -19.6 | 1.37E-02 |
| AQP8 | -15.1 | 2.08E-03 |
| NXPE2 | -13.8 | 2.92E-05 |
| THAP12 | -13.4 | 2.27E-02 |
| CLCA4 | -13.2 | 2.57E-05 |
| HMGCS2 | -12.8 | 0.00E+00 |
| OASL | -12.1 | 1.20E-02 |
| SLC26A3 | -12.0 | 9.52E-08 |
| FRMD1 | -9.6 | 1.51E-03 |
| FOXO6 | -9.1 | 1.78E-04 |
| NR1H4 | -7.6 | 1.96E-06 |
| GSTA2 | -7.4 | 7.07E-03 |
| CYP2B22 | -6.8 | 5.35E-03 |
| SLC30A10 | -6.3 | 2.38E-02 |
| SI | -6.1 | 2.79E-02 |
| COL6A6 | -5.7 | 3.03E-06 |
| CXCL9 | -5.7 | 3.65E-03 |
| DACT2 | -5.4 | 1.74E-02 |
| PCK1 | -5.4 | 1.48E-03 |
| PADI2 | -5.2 | 1.54E-06 |
| HAS3 | -5.2 | 5.01E-04 |
| SULT1E1 | -5.2 | 7.10E-07 |
| GUCA2A | -5.1 | 1.44E-04 |
| MOGAT2 | -4.9 | 2.97E-02 |
| NCR2 | -4.8 | 1.35E-02 |
| SLC51A | -4.8 | 3.48E-06 |
| SSTR5 | -4.8 | 1.30E-02 |
| CYP26B1 | -4.6 | 4.16E-08 |
| ABCA6 | -4.4 | 1.88E-04 |
| SLC16A1 | -4.4 | 0.00E+00 |
| CXCL10 | -4.4 | 7.18E-03 |
| RSAD2 | -4.3 | 2.28E-02 |
| AGT | -4.3 | 4.12E-03 |
| SLC25A34 | -4.2 | 1.12E-05 |
| GABRB2 | -4.0 | 1.45E-04 |
| TM6SF2 | -4.0 | 1.95E-09 |
| IFI27 | -3.9 | 1.12E-02 |
| CA1 | -3.9 | 1.38E-08 |
| P2RX3 | -3.9 | 4.22E-03 |
| ABCG2 | -3.4 | 2.49E-03 |
| WNT8B | -3.1 | 1.99E-03 |
| CA12 | -3.1 | 2.51E-06 |
| SLC38A4 | -3.0 | 3.10E-03 |
| SELENBP1 | -3.0 | 1.73E-07 |
| PARP15 | -3.0 | 6.17E-03 |
| CHP2 | -2.9 | 5.14E-05 |
| CNTFR | -2.9 | 3.11E-03 |
| CTBS | -2.9 | 4.10E-02 |
| CLDN10 | -2.8 | 4.58E-02 |
| CXCL12 | -2.8 | 2.48E-04 |
| SCN2A | -2.7 | 4.98E-02 |
| ABCA9 | -2.7 | 5.24E-02 |
| PRSS12 | -2.7 | 9.44E-04 |
| XCL1 | -2.7 | 5.72E-03 |
| ABCA8 | -2.7 | 4.77E-02 |
| GRIK4 | -2.7 | 9.60E-03 |
| IFI44 | -2.7 | 2.55E-02 |
| DHX58 | -2.7 | 3.59E-02 |
| IRF4L | -2.7 | 3.39E-02 |
| CCL8 | -2.6 | 7.80E-03 |
| LYPD6 | -2.6 | 3.08E-02 |
| AHRR | -2.6 | 6.47E-04 |
| HOXD10 | -2.6 | 1.40E-03 |
| UGT2C1 | -2.5 | 1.18E-05 |
| FBXO32 | -2.5 | 2.94E-04 |
| HS3ST3A1 | -2.5 | 4.16E-02 |
| UBE2L6 | -2.5 | 1.39E-04 |
| ZBP1 | -2.5 | 1.11E-02 |
| FOXS1 | -2.5 | 5.82E-03 |
| ABI3BP | -2.5 | 1.33E-03 |
| PTPRD | -2.5 | 2.63E-04 |
| CD36 | -2.4 | 7.42E-05 |
| CD300C | -2.4 | 8.64E-04 |
| SLC24A4 | -2.4 | 1.05E-02 |
| LILRB3L4 | -2.4 | 5.21E-02 |

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| MAMDC2 | -2.4 | 6.26E-03 |
| GBP2 | -2.4 | 9.65E-03 |
| AOC1 | -2.4 | 4.46E-05 |
| FABP1 | -2.4 | 1.03E-02 |
| FCER1A | -2.3 | 3.53E-02 |
| SELENOP | -2.3 | 5.83E-05 |
| SLC7A3L7* | -2.3 | 4.90E-02 |
| NT5E | -2.3 | 4.92E-03 |
| C11orf86 | -2.2 | 2.08E-03 |
| SEMA3A | -2.2 | 1.38E-02 |
| SECTM1 | -2.2 | 4.77E-02 |
| PRDX6 | -2.2 | 5.44E-05 |
| CARD14 | -2.2 | 2.07E-03 |
| IGF2 | -2.2 | 2.80E-02 |
| TLR8 | -2.2 | 2.49E-03 |
| SLC7A8 | -2.1 | 5.64E-03 |
| GBP6 | -2.1 | 3.20E-02 |
| AHCYL2 | -2.1 | 5.97E-05 |
| CTSW | -2.1 | 1.42E-02 |
| DBP | -2.1 | 1.42E-02 |
| PARP14 | -2.1 | 6.98E-03 |
| SLA-DRA | -2.1 | 5.53E-03 |
| SLC25A42 | -2.1 | 7.36E-03 |
| GLI2 | -2.1 | 7.08E-03 |
| MPEG1 | -2.1 | 5.72E-03 |
| ANK3 | -2.1 | 2.79E-02 |
| SLC7A3L4* | -2.1 | 4.13E-02 |
| EDIL3 | -2.1 | 5.28E-03 |
| CD209 | -2.1 | 3.13E-02 |
| IL34 | -2.1 | 4.12E-03 |
| RYR2 | -2.0 | 2.80E-03 |
| KLRG1 | -2.0 | 4.23E-02 |
| CYP7B1 | -2.0 | 1.59E-02 |
| TXNIP | -2.0 | 3.65E-03 |
| ADRB1 | -2.0 | 7.57E-03 |
| CD4 | -2.0 | 1.03E-02 |
| SLA-DRB1 | -2.0 | 1.25E-02 |
| ALDH1A3 | -2.0 | 1.10E-02 |
| GBP1 | -2.0 | 4.04E-02 |
| SLA-DQA1 | -2.0 | 1.33E-02 |
| IFI44L | -2.0 | 1.59E-02 |
| P2RY13 | -2.0 | 1.81E-02 |
| CD74 | -2.0 | 7.72E-03 |
| ACE | -2.0 | 6.94E-03 |
| ABCB1 | -2.0 | 7.10E-03 |
| PARP9 | -1.9 | 1.04E-03 |
| PCSK6 | -1.9 | 2.26E-04 |
| ANKH | -1.9 | 4.54E-02 |
| HOXD11 | -1.9 | 5.02E-02 |
| GGT1 | -1.9 | 4.29E-02 |
| MAF | -1.9 | 1.80E-03 |
| EGFLAM | -1.9 | 5.37E-03 |
| CAVIN2 | -1.9 | 9.17E-03 |
| SYNPO | -1.9 | 3.13E-03 |
| MS4A2 | -1.9 | 2.34E-02 |
| ADAMTS8 | -1.9 | 1.07E-02 |
| COLEC12 | -1.9 | 7.57E-03 |
| LY9L1* | -1.9 | 1.61E-02 |
| CST3 | -1.9 | 7.80E-03 |
| MAOA | -1.9 | 7.84E-04 |
| DAPK1 | -1.9 | 1.20E-02 |
| FOXF2 | -1.9 | 5.72E-03 |
| KLHL7 | -1.9 | 2.88E-03 |
| SEMA4D | -1.8 | 3.81E-02 |
| RNF213 | -1.8 | 3.66E-02 |
| HAPLN4 | -1.8 | 5.64E-03 |
| ACSF2 | -1.8 | 1.98E-04 |
| SATB1 | -1.8 | 2.46E-02 |
| PKNOX2 | -1.8 | 5.16E-02 |
| NR1D1 | -1.8 | 3.13E-02 |
| SLC16A5 | -1.8 | 9.64E-03 |
| CADM1 | -1.8 | 2.11E-02 |
| TEF | -1.8 | 3.94E-03 |
| MEIS2 | -1.8 | 5.29E-02 |
| AKR1E2 | -1.8 | 4.12E-03 |
| ADGRL1 | -1.8 | 4.66E-02 |
| HIC1 | -1.8 | 1.41E-02 |
| MAP2K6 | -1.8 | 4.90E-02 |
| TMPRSS2 | -1.8 | 1.60E-02 |
| LGALS9 | -1.8 | 1.10E-02 |

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| CLCN2 | -1.8 | 3.54E-05 |
| POUGF1 | -1.8 | 3.37E-02 |
| CD86 | -1.8 | 1.93E-02 |
| LTBP4 | -1.8 | 5.61E-03 |
| WNT2B | -1.8 | 1.98E-02 |
| ADA | -1.7 | 2.04E-02 |
| LIFR | -1.7 | 7.18E-03 |
| ARHGAP6 | -1.7 | 3.47E-02 |
| IFITM1L2 | -1.7 | 8.91E-03 |
| FGFRL1 | -1.7 | 1.45E-02 |
| CIITA | -1.7 | 4.54E-02 |
| SLA-DMB | -1.7 | 2.70E-02 |
| IHH | -1.7 | 7.62E-03 |
| ZBTB4 | -1.7 | 1.22E-03 |
| TAP1 | -1.7 | 2.23E-02 |
| SLC9A2 | -1.7 | 1.92E-03 |
| PTCH1 | -1.7 | 4.04E-02 |
| C1QA | -1.7 | 1.29E-02 |
| CDKN2B | -1.7 | 7.89E-03 |
| SLA-2 | -1.7 | 5.02E-02 |
| BDH1 | -1.7 | 7.89E-03 |
| FCGR3A | -1.7 | 1.21E-02 |
| APOL2 | -1.7 | 3.42E-02 |
| C1QC | -1.7 | 1.61E-02 |
| ABCA1 | -1.7 | 5.31E-02 |
| CDH24 | -1.7 | 3.29E-02 |
| IL2RB | -1.7 | 2.69E-02 |
| JAML | -1.7 | 3.23E-02 |
| TNFAIP2 | -1.7 | 1.04E-03 |
| ABCB6 | -1.6 | 5.08E-03 |
| CTSD | -1.6 | 1.68E-02 |
| DOK2 | -1.6 | 3.97E-02 |
| SLC45A3 | -1.6 | 2.17E-02 |
| IGSF3 | -1.6 | 5.40E-02 |
| TMPRSS4 | -1.6 | 6.34E-03 |
| CD33 | -1.6 | 4.32E-02 |
| FGF11 | -1.6 | 2.39E-02 |
| SLA-3 | -1.6 | 4.54E-02 |
| TCF21 | -1.6 | 1.33E-02 |
| SNX4 | -1.6 | 5.72E-03 |
| PNPLA6 | -1.6 | 6.03E-03 |
| CD302 | -1.6 | 5.19E-02 |
| PFKFB4 | -1.6 | 5.72E-03 |
| RETSAT | -1.6 | 7.89E-03 |
| LCP2 | -1.6 | 1.11E-02 |
| GIMAP8 | -1.6 | 1.73E-02 |
| NADK | -1.6 | 4.96E-03 |
| F8 | -1.6 | 3.01E-02 |
| SCARB2 | -1.6 | 5.21E-04 |
| SLC25A27 | -1.6 | 7.18E-03 |
| ELMSAN1 | -1.6 | 3.05E-02 |
| SLA-11 | -1.6 | 4.46E-02 |
| ZNF664 | -1.6 | 5.37E-03 |
| SLC8A1 | -1.6 | 5.29E-02 |
| TP53INP2 | -1.6 | 3.64E-02 |
| RALGDS | -1.6 | 2.21E-02 |
| COL4A6 | -1.6 | 4.50E-02 |
| SIPA1 | -1.6 | 5.29E-02 |
| CSF2RB | -1.5 | 4.36E-02 |
| CD300H | -1.5 | 3.24E-02 |
| GSTP1 | -1.5 | 4.90E-02 |
| PIK3IP1 | -1.5 | 4.80E-02 |
| TMEM140 | -1.5 | 3.04E-02 |
| CSF1 | -1.5 | 1.68E-02 |
| PLCD1 | -1.5 | 3.39E-02 |
| VDR | -1.5 | 3.04E-02 |
| IL10RA | -1.5 | 3.17E-02 |
| IRF9 | -1.5 | 4.68E-02 |
| ASAP3 | -1.5 | 4.15E-02 |
| MERTK | -1.5 | 4.10E-02 |
| SYNE1 | -1.5 | 4.69E-02 |
| DTX3 | -1.5 | 2.14E-02 |
| BSG | -1.5 | 2.27E-02 |
| ADCY9 | -1.5 | 5.72E-03 |
| MOV10 | -1.5 | 1.20E-02 |
| HPSE | -1.5 | 5.25E-02 |
| UGT1A10 | -1.5 | 8.65E-03 |
| PNPLA2 | -1.5 | 3.42E-02 |
| TST | -1.5 | 5.16E-02 |
| COBL | -1.5 | 1.01E-02 |

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| TSPAN7 | -1.5 | 3.19E-02 |
| UNC93B1 | -1.5 | 4.34E-02 |
| LRP4 | -1.5 | 5.02E-02 |
| MAP3K3 | -1.5 | 1.38E-02 |
| CSF1R | -1.5 | 4.54E-02 |
| GABARAPL1 | -1.5 | 2.90E-02 |
| PCGF2 | -1.5 | 5.29E-02 |
| SLC30A7 | 1.5 | 3.01E-02 |
| TMED2 | 1.5 | 1.87E-02 |
| HMGB1 | 1.5 | 1.59E-02 |
| ENTPD6 | 1.5 | 4.58E-02 |
| EPRS | 1.5 | 1.81E-02 |
| SMAD1 | 1.5 | 1.17E-02 |
| MAP4K4 | 1.5 | 9.03E-03 |
| SELENOS | 1.5 | 3.07E-02 |
| SLC39A11 | 1.5 | 3.01E-02 |
| EDEM1 | 1.5 | 2.46E-02 |
| MAPK6 | 1.5 | 4.90E-02 |
| MET | 1.5 | 4.52E-02 |
| SLC30A5 | 1.5 | 3.16E-02 |
| NECTIN1 | 1.5 | 3.13E-02 |
| MAL2 | 1.5 | 8.79E-03 |
| CDH17 | 1.5 | 3.46E-02 |
| COPB1 | 1.5 | 4.68E-02 |
| SHMT2 | 1.5 | 1.06E-02 |
| VLDLR | 1.5 | 7.00E-03 |
| ACTG1 | 1.5 | 2.84E-03 |
| ARF2 | 1.5 | 4.54E-02 |
| SLC39A7 | 1.5 | 1.20E-02 |
| ERLEC1 | 1.5 | 4.94E-02 |
| SLC7A1 | 1.5 | 3.05E-02 |
| SPRED1 | 1.5 | 7.34E-03 |
| SELENOF | 1.5 | 1.19E-02 |
| S100A11 | 1.5 | 3.35E-02 |
| UFM1 | 1.5 | 2.36E-02 |
| ANXA5 | 1.5 | 1.54E-02 |
| TACC3 | 1.5 | 3.05E-02 |
| PGK1 | 1.5 | 1.73E-02 |
| HMGB2 | 1.5 | 1.72E-02 |
| CTNNB1 | 1.5 | 8.88E-03 |
| MYBL2 | 1.5 | 3.16E-02 |
| MCM6 | 1.5 | 2.31E-02 |
| STT3A | 1.5 | 2.64E-02 |
| C9 | 1.5 | 5.09E-02 |
| CBFA2T2 | 1.5 | 2.97E-02 |
| ANXA2 | 1.5 | 9.17E-03 |
| SERP1 | 1.5 | 8.65E-03 |
| PRTFDC1 | 1.5 | 4.54E-02 |
| RACGAP1 | 1.5 | 2.85E-02 |
| AMIGO3 | 1.6 | 5.61E-03 |
| OSMR | 1.6 | 1.24E-02 |
| RPN2 | 1.6 | 1.62E-02 |
| ODC1 | 1.6 | 4.12E-03 |
| FZD6 | 1.6 | 4.12E-02 |
| HMG2 | 1.6 | 1.45E-03 |
| SPATS2 | 1.6 | 3.11E-03 |
| UBE2S | 1.6 | 1.44E-02 |
| PLK1 | 1.6 | 1.79E-02 |
| SKA2 | 1.6 | 5.02E-02 |
| TSPAN13 | 1.6 | 1.37E-02 |
| CHEK2 | 1.6 | 1.60E-02 |
| BNIP3 | 1.6 | 7.73E-03 |
| KCNE3 | 1.6 | 6.59E-03 |
| FICD | 1.6 | 2.91E-02 |
| SLC35C1 | 1.6 | 7.89E-03 |
| SEC24D | 1.6 | 1.45E-03 |
| SELENOM | 1.6 | 1.73E-02 |
| TMEM38B | 1.6 | 5.49E-02 |
| MIA3 | 1.6 | 4.10E-03 |
| SLC1A5 | 1.6 | 5.72E-03 |
| SERPINB1 | 1.6 | 1.75E-02 |
| P2RX4 | 1.6 | 4.88E-03 |
| BIRC5 | 1.6 | 1.82E-02 |
| GARS | 1.6 | 1.95E-03 |
| ADGRG6 | 1.6 | 2.36E-02 |
| CASC4 | 1.6 | 2.07E-03 |
| TK1 | 1.6 | 3.23E-02 |
| CLIC2 | 1.6 | 1.22E-02 |
| LRRC59 | 1.6 | 1.88E-02 |
| RRBP1 | 1.6 | 1.17E-02 |

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| STARD10 | 1.6 | 4.04E-03 |
| SLC17A9 | 1.6 | 5.72E-03 |
| P4HA2 | 1.6 | 3.60E-03 |
| KIF22 | 1.6 | 9.28E-03 |
| CYP51A1 | 1.6 | 5.76E-03 |
| C3 | 1.6 | 3.66E-02 |
| CAD | 1.6 | 1.54E-03 |
| SEL1L3 | 1.6 | 7.42E-03 |
| PCDH12 | 1.6 | 5.06E-02 |
| ARG2 | 1.6 | 2.16E-02 |
| S100A6 | 1.6 | 1.55E-02 |
| CMAS | 1.6 | 6.03E-03 |
| CFI | 1.6 | 4.23E-02 |
| DHCR7 | 1.6 | 1.99E-03 |
| POLE | 1.6 | 1.60E-02 |
| FOXA1 | 1.6 | 3.80E-02 |
| MANF | 1.6 | 3.08E-02 |
| NSDHL | 1.6 | 4.96E-03 |
| WLS | 1.6 | 1.61E-02 |
| CDH1 | 1.6 | 8.68E-03 |
| B4GALT1 | 1.6 | 4.04E-02 |
| C9H1orf116 | 1.6 | 7.00E-03 |
| GFPT1 | 1.7 | 3.70E-03 |
| SEC11C | 1.7 | 8.53E-03 |
| PIIB | 1.7 | 3.55E-03 |
| IL33 | 1.7 | 1.40E-02 |
| HSP90B1 | 1.7 | 2.68E-02 |
| DNAJC10 | 1.7 | 3.09E-03 |
| PLK2 | 1.7 | 9.11E-03 |
| SEC61G | 1.7 | 7.96E-03 |
| PANK1 | 1.7 | 2.78E-02 |
| ACSL3 | 1.7 | 2.03E-03 |
| ARF4 | 1.7 | 1.90E-03 |
| XBP1 | 1.7 | 3.59E-03 |
| STARD5 | 1.7 | 4.28E-03 |
| TSPAN12 | 1.7 | 4.45E-04 |
| RIPK3 | 1.7 | 5.64E-03 |
| FASN | 1.7 | 3.60E-03 |
| DNA2 | 1.7 | 3.13E-02 |
| GALNT7 | 1.7 | 2.49E-03 |
| CDC25C | 1.7 | 1.33E-02 |
| GNA14 | 1.7 | 5.35E-03 |
| PKM | 1.7 | 1.40E-03 |
| WFS1 | 1.7 | 1.61E-03 |
| LIPH | 1.7 | 8.88E-03 |
| BLM | 1.7 | 3.03E-02 |
| TPX2 | 1.7 | 6.03E-03 |
| ALDOC | 1.7 | 1.06E-02 |
| HIF1A | 1.7 | 3.73E-03 |
| BST1 | 1.7 | 5.72E-03 |
| MMD | 1.7 | 4.10E-03 |
| SC5D | 1.7 | 1.42E-03 |
| ATOH1 | 1.7 | 2.37E-02 |
| DERL3 | 1.7 | 7.70E-03 |
| PHLDA1 | 1.7 | 1.31E-02 |
| YARS2 | 1.7 | 2.77E-02 |
| DDIT4 | 1.7 | 9.24E-04 |
| SLC5A1 | 1.7 | 6.38E-03 |
| SLC35A3 | 1.7 | 1.61E-02 |
| PDIA4 | 1.7 | 7.74E-03 |
| FLVCR2 | 1.8 | 2.73E-03 |
| MANSC1 | 1.8 | 2.51E-04 |
| BUB1 | 1.8 | 2.17E-02 |
| FDPS | 1.8 | 2.52E-03 |
| PGM3 | 1.8 | 9.17E-04 |
| HELLS | 1.8 | 7.06E-03 |
| MVD | 1.8 | 5.01E-04 |
| CCNB2 | 1.8 | 2.21E-02 |
| BGN | 1.8 | 4.69E-02 |
| ATOX1 | 1.8 | 8.67E-03 |
| PNP | 1.8 | 7.47E-03 |
| NT5DC2 | 1.8 | 5.72E-03 |
| LSS | 1.8 | 3.41E-04 |
| AACS | 1.8 | 1.18E-04 |
| ARNTL2 | 1.8 | 5.25E-02 |
| FADS1 | 1.8 | 8.80E-05 |
| RRM2 | 1.8 | 2.15E-04 |
| BUB1B | 1.8 | 9.28E-03 |
| ECM1 | 1.8 | 3.23E-03 |
| TOP2A | 1.8 | 4.25E-03 |

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| DGAT2 | 1.8 | 3.05E-02 |
| E2F7 | 1.8 | 1.34E-02 |
| ETV5 | 1.8 | 1.26E-02 |
| SLC50A1 | 1.8 | 9.18E-04 |
| ECSCR | 1.8 | 3.94E-03 |
| MIS18A | 1.9 | 1.76E-02 |
| ADAM9 | 1.9 | 2.26E-04 |
| AFF2 | 1.9 | 4.49E-02 |
| TRAIP | 1.9 | 5.08E-03 |
| PHLDA2 | 1.9 | 2.92E-02 |
| ZGRF1 | 1.9 | 2.01E-02 |
| SMOC2 | 1.9 | 2.90E-02 |
| CDC48 | 1.9 | 9.35E-04 |
| SLC24A5 | 1.9 | 4.98E-02 |
| HMGCR | 1.9 | 1.78E-04 |
| GADD45A | 1.9 | 5.02E-03 |
| CFB | 1.9 | 2.38E-02 |
| GIN51 | 1.9 | 7.55E-03 |
| KIF23 | 1.9 | 5.99E-03 |
| ACLY | 1.9 | 1.76E-05 |
| BCAT1 | 1.9 | 5.18E-03 |
| CCR2 | 1.9 | 3.11E-02 |
| MYOF | 1.9 | 1.39E-04 |
| CD163 | 1.9 | 2.29E-02 |
| THBD | 1.9 | 3.32E-03 |
| COL7A1 | 1.9 | 1.47E-03 |
| BMP7 | 1.9 | 1.22E-03 |
| SMC2 | 1.9 | 4.42E-03 |
| FDFT1 | 1.9 | 1.14E-05 |
| MASTL | 1.9 | 4.54E-02 |
| SULT1A1 | 1.9 | 1.57E-02 |
| PRDX4 | 1.9 | 1.03E-03 |
| "MARCH3" | 1.9 | 8.78E-03 |
| SLC7A5 | 1.9 | 1.40E-03 |
| CHEK1 | 1.9 | 2.00E-02 |
| CD24 | 1.9 | 6.90E-03 |
| STARD4 | 1.9 | 8.33E-04 |
| HSD17B7 | 1.9 | 1.22E-03 |
| LMAN1 | 2.0 | 1.88E-04 |
| SERPINE2 | 2.0 | 1.59E-02 |
| PKD1L2 | 2.0 | 4.19E-02 |
| SLC25A35 | 2.0 | 9.64E-03 |
| DEPDC1 | 2.0 | 3.05E-02 |
| ADM5 | 2.0 | 7.68E-03 |
| GPR19 | 2.0 | 1.76E-02 |
| GNE | 2.0 | 5.66E-05 |
| COL8A1 | 2.0 | 1.40E-02 |
| CD14 | 2.0 | 7.89E-03 |
| CDK1 | 2.0 | 7.19E-03 |
| IGLL5L | 2.0 | 5.49E-02 |
| SERPINB5 | 2.0 | 9.60E-04 |
| AZGP1 | 2.0 | 3.20E-02 |
| KIAA0101 | 2.0 | 7.84E-04 |
| KRT18 | 2.0 | 1.04E-03 |
| PCK2 | 2.0 | 3.22E-04 |
| ADAM20L2 | 2.0 | 2.60E-03 |
| TMED3 | 2.0 | 1.16E-03 |
| SHCBP1 | 2.0 | 5.72E-03 |
| HMMR | 2.0 | 1.22E-03 |
| LDLR | 2.1 | 2.26E-04 |
| DHRS9 | 2.1 | 1.73E-02 |
| SEMA7A | 2.1 | 1.51E-03 |
| MEST | 2.1 | 2.12E-02 |
| CXCR4 | 2.1 | 5.27E-04 |
| SPDL1 | 2.1 | 2.79E-02 |
| F13A1 | 2.1 | 1.19E-03 |
| ZNF215 | 2.1 | 2.39E-02 |
| KNL1 | 2.1 | 2.84E-03 |
| SLC1A2 | 2.1 | 2.44E-02 |
| ASGR2 | 2.1 | 3.46E-02 |
| GCNT3 | 2.1 | 7.34E-03 |
| ITGA2 | 2.2 | 1.50E-04 |
| SERPINB8 | 2.2 | 2.45E-04 |
| IGHE | 2.2 | 1.73E-02 |
| CFHR2 | 2.2 | 4.39E-02 |
| MYBL1 | 2.2 | 4.61E-02 |
| STC1 | 2.2 | 3.42E-03 |
| HIST1H3A | 2.2 | 9.33E-03 |
| EGF | 2.2 | 1.60E-03 |
| PFKFB3 | 2.2 | 5.86E-04 |

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| MSMO1 | 2.2 | 4.56E-06 |
| GALNT6 | 2.2 | 3.33E-06 |
| IDI1 | 2.2 | 2.17E-04 |
| FABP3 | 2.3 | 1.30E-03 |
| VSTM1 | 2.3 | 7.89E-03 |
| FADS2 | 2.3 | 1.63E-05 |
| CFAP74 | 2.3 | 3.65E-03 |
| MED12L | 2.3 | 6.53E-03 |
| SQLE | 2.3 | 8.68E-06 |
| SPHKAP | 2.3 | 1.77E-02 |
| HP | 2.3 | 1.38E-02 |
| FFAR4 | 2.3 | 5.35E-03 |
| C4BPB | 2.3 | 1.66E-04 |
| LOC102161685 | 2.3 | 4.59E-04 |
| EBP | 2.3 | 4.62E-06 |
| LIPG | 2.3 | 4.46E-02 |
| TMEM158 | 2.4 | 4.39E-02 |
| OSM | 2.4 | 1.97E-02 |
| PTGER1 | 2.4 | 2.11E-03 |
| LAMB3 | 2.4 | 1.73E-07 |
| ELOVL6 | 2.4 | 1.46E-05 |
| IFIT1L1 | 2.4 | 2.12E-02 |
| SCNN1D | 2.4 | 4.59E-03 |
| FGF7 | 2.4 | 6.47E-04 |
| IGFBP4 | 2.4 | 1.00E-05 |
| CXCL14 | 2.4 | 2.69E-05 |
| TFF3 | 2.4 | 2.78E-03 |
| POU2AF1 | 2.4 | 1.75E-04 |
| CACNA1F | 2.4 | 4.37E-02 |
| TNFRSF12A | 2.5 | 1.07E-04 |
| TFRC | 2.5 | 2.06E-05 |
| PPP2R5E | 2.5 | 1.68E-02 |
| HSD11B1 | 2.5 | 5.23E-04 |
| ROS1 | 2.5 | 2.01E-02 |
| SPHK1 | 2.5 | 2.43E-03 |
| ACAT2 | 2.5 | 4.51E-08 |
| FCN2 | 2.5 | 2.74E-03 |
| SCD | 2.5 | 1.62E-04 |
| GPAT3 | 2.5 | 7.03E-05 |
| BAALC | 2.6 | 9.35E-04 |
| PTPRN2 | 2.6 | 3.00E-03 |
| MMP9 | 2.6 | 6.92E-03 |
| IGH@ | 2.6 | 1.24E-02 |
| ME1 | 2.6 | 5.20E-03 |
| HHIPL1 | 2.6 | 1.78E-04 |
| ETV4 | 2.7 | 1.36E-04 |
| SNCA | 2.7 | 4.96E-03 |
| PLA2G3 | 2.7 | 4.13E-04 |
| HMGCS1 | 2.8 | 3.97E-07 |
| ADGRE1 | 2.8 | 3.05E-02 |
| PLAUR | 2.8 | 4.01E-04 |
| WAP1* | 2.8 | 3.59E-02 |
| CLCA1 | 2.8 | 6.25E-04 |
| TMEM190 | 2.8 | 4.80E-02 |
| NKX2-2 | 2.8 | 5.20E-03 |
| CLEC10A | 2.9 | 3.05E-02 |
| LCN2 | 2.9 | 6.98E-03 |
| B3GNT6 | 2.9 | 5.44E-04 |
| SLC11A1 | 2.9 | 2.78E-02 |
| TIMP1 | 2.9 | 2.65E-07 |
| INSIG1 | 2.9 | 1.64E-08 |
| ALDH3B2 | 2.9 | 1.18E-02 |
| TGM3 | 3.0 | 3.20E-02 |
| TREM2 | 3.0 | 7.72E-03 |
| MMP1 | 3.1 | 2.86E-02 |
| SLC12A8 | 3.1 | 3.65E-04 |
| ABAT | 3.1 | 1.97E-03 |
| ADAM12 | 3.1 | 1.29E-03 |
| PDZK1IP1L | 3.1 | 8.64E-04 |
| ITGB6 | 3.1 | 2.10E-07 |
| CCL23 | 3.1 | 2.69E-03 |
| TLE6 | 3.2 | 5.27E-04 |
| PHGDH | 3.3 | 5.01E-04 |
| PTGS2 | 3.4 | 8.84E-04 |
| GABRD | 3.4 | 4.54E-04 |
| CBS | 3.5 | 7.42E-05 |
| SPDEF | 3.5 | 2.29E-06 |
| RN7SL1 | 3.5 | 3.19E-02 |
| TNIP3 | 3.5 | 3.16E-03 |
| LRP2 | 3.6 | 1.26E-02 |

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| SHANK2 | 3.6 | 4.23E-04 |
| SYNE4 | 3.6 | 4.65E-03 |
| SLC7A11 | 3.7 | 3.60E-02 |
| P4HA3 | 3.7 | 1.39E-04 |
| STRA6 | 3.8 | 6.03E-03 |
| MUC2 | 3.8 | 1.60E-07 |
| IL1R2 | 3.8 | 1.61E-03 |
| NEUROG3 | 3.8 | 3.07E-03 |
| TNFRSF11B | 3.9 | 5.64E-05 |
| SERPINB2 | 3.9 | 1.24E-02 |
| NPC1L1 | 3.9 | 4.56E-02 |
| PSAT1 | 3.9 | 3.89E-03 |
| NTRK1 | 4.0 | 2.12E-02 |
| COL28A1 | 4.0 | 1.89E-04 |
| CAPNS2 | 4.1 | 7.03E-05 |
| S100A2 | 4.2 | 1.75E-04 |
| HK2 | 4.2 | 1.78E-04 |
| MYOM3 | 4.2 | 1.12E-05 |
| SAA3 | 4.5 | 3.27E-02 |
| PADI4 | 4.5 | 4.99E-02 |
| RNF39 | 4.5 | 6.41E-07 |
| SERPINA1 | 4.5 | 9.03E-04 |
| S100A3 | 4.5 | 2.35E-02 |
| AADAC | 4.6 | 3.59E-03 |
| HOXD1 | 4.6 | 9.07E-03 |
| ADM2 | 4.7 | 7.03E-05 |
| WNT2 | 4.7 | 1.78E-04 |
| MPTX | 4.9 | 2.10E-07 |
| UPK1B | 5.0 | 2.36E-06 |
| BPIFB2 | 5.0 | 1.64E-03 |
| FAM71E2 | 5.0 | 3.52E-02 |
| F3 | 5.2 | 1.85E-10 |
| SNORA48 | 5.2 | 2.03E-03 |
| CHI3L1 | 5.2 | 2.51E-04 |
| PI3 | 5.3 | 1.15E-03 |
| NPPC | 5.7 | 3.92E-04 |
| AGR2 | 5.7 | 6.15E-07 |
| COL26A1 | 5.8 | 6.82E-05 |
| SPINK4 | 5.8 | 1.64E-08 |
| BPIFB6 | 6.0 | 4.61E-02 |
| GYS2 | 6.0 | 4.66E-02 |
| MCHR1 | 6.1 | 3.59E-02 |
| SERPINB11 | 6.3 | 3.20E-03 |
| IL36A | 6.8 | 6.44E-03 |
| SULT2A1 | 7.5 | 5.36E-02 |
| ANXA8 | 7.6 | 1.18E-05 |
| TRIM6 | 7.8 | 9.11E-03 |
| ADAM20L6 | 8.1 | 1.07E-03 |
| CRLF1 | 8.2 | 1.09E-08 |
| ADAMTS16 | 8.3 | 2.23E-05 |
| IL11 | 8.3 | 1.22E-03 |
| PCSK9 | 9.0 | 1.11E-11 |
| A3GALT2 | 9.7 | 1.38E-02 |
| REG4 | 9.9 | 1.95E-09 |
| AQP5 | 10.2 | 1.63E-03 |
| IGHG1 | 10.3 | 8.11E-04 |
| MMP7 | 10.5 | 7.62E-03 |
| S100A8 | 10.8 | 2.17E-03 |
| S100A9 | 11.0 | 2.03E-03 |
| MMP8 | 11.4 | 3.47E-03 |
| MMP13 | 11.4 | 2.65E-07 |
| TFF2 | 12.2 | 3.25E-02 |
| SLC6A2 | 13.1 | 2.14E-02 |
| S100A12 | 13.4 | 7.36E-04 |
| PRG4 | 13.5 | 3.43E-04 |
| MMP12 | 13.9 | 7.63E-10 |
| C1QL2 | 15.4 | 1.39E-04 |
| SERPINA3-2 | 16.2 | 1.05E-06 |
| ARG1 | 16.6 | 8.41E-04 |
| SCGB2A2 | 17.9 | 4.89E-06 |
| POUSF1 | 19.0 | 3.78E-02 |
| PADI3 | 19.0 | 4.69E-03 |
| RHCG | 19.8 | 5.18E-04 |
| SPINK6 | 21.5 | 4.16E-04 |
| WNT7A | 25.9 | 4.23E-02 |
| IL4I1L | 26.0 | 1.39E-04 |
| CLEC18A | 46.3 | 9.53E-05 |
| PADI1 | 51.6 | 6.25E-04 |
| TFF1 | 93.2 | 3.12E-06 |

Supplemental Table S7: Clustered Up-regulation of Physiology and Immunology DEGs

| Gene | Functional Categorization | S2 DPI w worms vs Control Fold | EDGE FDR Adj p value | S2 DPI w/o worms vs Control Fold | EDGE FDR Adj p value | (S2 DPI Inf w/o worms vs w Worms Fold | EDGE FDR Adj p value | (21 DPI Inf vs Control) Fold | EDGE FDR Adj p value |
|--|--|--------------------------------|----------------------|----------------------------------|----------------------|---------------------------------------|----------------------|------------------------------|----------------------|
| Antibacterial Response | | | | | | | | | |
| BPIFB2 | Bacterial Binding (12185532); BPI SF | 6.7 | 2.43E-03 | | | 5.0 | 1.64E-03 | | |
| BPIFB6 | Bacterial Binding (12185532); BPI SF | 11.0 | 4.32E-02 | | | 6.0 | 4.61E-02 | | |
| GNLY | Antimicrobial Peptide (15996224); SapB 2 SF | 68.8 | 2.42E-09 | 132.0 | 2.98E-11 | | | | |
| HMG2 | Antimicrobial Peptide (16204630); HMG14/17 SF | | | | | | | 1.6 | 1.45E-03 |
| LCN2 | Antibacterial Response (15531878, 25398327); Lipocalin SF | 3.0 | 1.80E-02 | | | 2.9 | 6.98E-03 | | |
| LTF | Antibacterial Response (8423097); Transferrin SF | 52.9 | 5.95E-03 | | | | | | |
| LYZ | Antibacterial Response (28804131); LYZ1 SF | 13.0 | 7.77E-03 | | | | | | |
| NTRK1 | Antibacterial Response (25359936); Allergic Inflammation (25389033); Ig SF; LRRCT SF | 42.0 | 2.62E-07 | 10.6 | 3.53E-03 | 4.0 | 2.12E-02 | | |
| OLF4 | (-) Regulator of Antibacterial Responses (20534456, 22844115); OLF SF | 2.2 | 1.48E-02 | | | | | | |
| PADI4 | Antibacterial Responses (20733033); PAD SF | 11.0 | 7.93E-03 | | | 4.5 | 4.99E-02 | | |
| PI3 | Antimicrobial Peptide Activity (17964057); WAP SF | 4.7 | 1.63E-02 | | | 5.3 | 1.15E-03 | 4.6 | 2.55E-08 |
| S100A14 | Antibacterial Response (15568027); S100 SF (17625598) | | | | | | | 1.8 | 2.70E-02 |
| SLPI | Antimicrobial Peptide Activity (18075823); WAP SF | | | | | | | 4.8 | 2.22E-11 |
| SPHK1 | Antibacterial Response (20634980, 26113114); DAGK Cat SF | | | | | 2.5 | 2.43E-03 | 2.8 | 3.05E-03 |
| UPK1B | E. coli Attachment factor (9822381); Tetraspanin LEL SF | 10.9 | 1.66E-08 | | | 5.0 | 2.36E-06 | | |
| Antiparasitic Response | | | | | | | | | |
| AREG | Antiparasitic Response (17170297); Th2-Associated (17170297); PHA02887 SF | 2.1 | 2.09E-02 | | | | | 2.2 | 8.37E-03 |
| ARG1 | Antiparasitic Response (19764983); M2-associated (5879104); Arginase HDAC SF | 122.6 | 4.56E-05 | | | 16.6 | 8.41E-04 | 30.1 | 2.28E-07 |
| CHIA | Antiparasitic Response (15618176); Th2-Associated (11553626); GH18 Chitinase Like SF | 2.3 | 3.56E-02 | | | | | | |
| GATA3 | (+) Regulator of Th2-Cell/ILC2 Differentiation (19375293, 23733962); ZnF GATA TF SF | | | 4.4 | 4.43E-04 | | | | |
| IGHE | Antiparasitic Response (24592267); Ig SF; Ig Heavy Chain Constant Region SF | 5.0 | 2.59E-06 | 2.3 | 4.86E-02 | 2.2 | 1.73E-02 | | |
| IRF4 | Antiparasitic Response (20729857); M2-associated (20729857); IRF TF SF | 2.1 | 2.55E-03 | | | | | | |
| REG3A | Antiparasitic Response (25240019); PRR (16931762) | 275.6 | 2.48E-03 | 168.9 | 2.26E-02 | | | | |
| REG4 | Antiparasitic Response (25240019); PRR (20692269); CLECT SF | 15.8 | 2.97E-08 | | | 9.9 | 1.95E-09 | 11.1 | 8.84E-20 |
| RETNLB | Antiparasitic Responses (15340149); Th2-Associated (12574343); Resistin SF | 10.1 | 2.14E-03 | | | | | | |
| SERPINB2 | Antiparasitic Response (23630350) M2-associated (23355731); SERPIN SF | 9.8 | 2.12E-04 | | | 3.9 | 1.24E-02 | 16.2 | 4.90E-32 |
| TFF1 | Antiparasitic Response (21569362); Trefoil SF | 705.1 | 2.48E-05 | | | 93.2 | 3.12E-06 | 25.9 | 2.62E-06 |
| TFF2 | Antiparasitic Response (22329990); Trefoil SF | 25.1 | 3.57E-02 | | | 12.2 | 3.25E-02 | 37.1 | 6.93E-10 |
| TFF3 | Epithelial Wound Healing (16410243); IL-4 Induced (15004182); Trefoil SF | 2.7 | 2.49E-03 | | | 2.4 | 2.78E-03 | | |
| Complement Related | | | | | | | | | |
| FCN1 | Complement Activation (20375620); PRR (21490156); FReD SF | | | | | 2.5 | 2.74E-03 | 2.9 | 9.94E-05 |
| FCN2 | Complement Activation (19632990); PRR (15331601); FReD SF | | | | | | | | |
| C1QL2 | Complement Fixation; BA13 Ligand (21262840); C1q SF | 7.0 | 4.51E-02 | | | 15.4 | 1.39E-04 | | |
| C3 | Complement Component; AZM SF; ANATO SF; IsoPREN C2-like SF; MG1 SF; NTR-like SF | 1.7 | 3.10E-02 | | | 1.6 | 3.66E-02 | | |
| C4BPA | Complement Component; CCP SF | 4.3 | 1.37E-03 | | | | | | |
| C4BPB | Complement Component; CCP SF | 3.1 | 5.70E-06 | | | 2.3 | 1.66E-04 | | |
| C9 | Complement Component; MACPF SF | 1.6 | 3.93E-02 | | | 1.5 | 5.09E-02 | | |
| CFB | Alternative Complement Activation Pathway; CCP SF; TSP-1 SF; vWFA SF | 2.1 | 1.92E-02 | | | 1.9 | 2.38E-02 | | |
| CFI | Complement factor; SRCR SF | 1.7 | 4.15E-02 | | | | | | |
| CFHR2 | Factor H (FH)-related Protein Family; CCP SF | | | | | 2.2 | 4.39E-02 | | |
| Cytokines, Chemokines, Growth Factors and Receptors | | | | | | | | | |
| ACKR3 | CXCL12 Receptor (16107333); CXK Chemokine R SF | 1.5 | 4.95E-02 | | | | | | |
| AZGP1 | Adipocytokine (18663996); MHC1 SF; Immunoglobulin SF | | | | | 2.0 | 3.20E-02 | | |
| BDNF | Cytokine (19348610); Neurotrophic; NGF SF | 2.7 | 1.64E-02 | | | | | | |
| BMP7 | Cytokine; Development; TGFβ SF | 2.4 | 6.17E-05 | | | 1.9 | 1.22E-03 | | |
| CCL23 | CCR1 Ligand (15927850); CCL Chemokine SF | 5.1 | 1.56E-04 | | | 3.1 | 2.69E-03 | | |
| CCL28 | CCR3 Ligand (10975800); CCL Chemokine SF | 2.3 | 4.92E-03 | | | | | | |
| CCR1 | CCL14 Receptor; CCL16 Receptor; CCL23 Receptor; CCL Chemokine R SF | | | | | 1.9 | 3.11E-02 | | |
| CCR2 | CCL2 Receptor; CCL7 Receptor; CCL13 Receptor; CCL Chemokine R SF | 2.5 | 2.63E-03 | | | 8.2 | 1.09E-08 | | |
| CRLF1 | Cytokine (19933857); IL6 Receptor Ligand (19933857); Ig SF; FN3 SF | 7.1 | 3.16E-05 | | | | | | |
| CSF3R | Cytokine Receptor; Lep Receptor Ig SF | 2.7 | 1.81E-02 | | | | | | |
| CXCL1 | CXCR2 Ligand; CXK Chemokine SF | 2.9 | 1.56E-02 | | | | | | |
| CXCL14 | CXCR4 Ligand (28360196); CXK Chemokine SF | 3.5 | 9.85E-08 | | | 2.4 | 2.69E-05 | 4.4 | 2.73E-06 |
| CXCL16 | CXCR6 Ligand; CXK Chemokine SF | | | | | | | 2.0 | 2.89E-03 |
| CXCL17 | GPR35 Ligand (25411203); CXK Chemokine SF | | | | | | | 4.5 | 7.44E-06 |
| CXCL6 | CXCR1 Ligand; CXCR2 Ligand; CXK Chemokine SF | 5.3 | 2.39E-05 | 3.1 | 1.01E-02 | | | | |
| CXCL8 | CXCR1 Ligand; CXCR2 Ligand; CXK Chemokine SF | 3.4 | 5.32E-04 | | | | | | |
| CXCR1 | CXCL1 R; CXCL2 R; CXCL3 R; CXCL6 R; CXCL8 R; CXK Chemokine R SF | 2.7 | 1.71E-02 | | | | | | |
| CXCR2 | CXCL1 R; CXCL2 R; CXCL3 R; CXCL6 R; CXCL8 R; CXK Chemokine R SF | 2.8 | 2.64E-02 | | | | | | |
| CXCR4 | CXCL12 R; CXK Chemokine R SF | 1.9 | 1.45E-02 | | | | | | |
| EGF | Wound Healing (2045428); LY SF; vWFA SF; EGF CA SF; PHA03099 SF | 2.5 | 1.10E-03 | | | 2.1 | 5.27E-04 | | |
| IL11 | Cytokine (27312790); Th2-Associated (15699166); IL11 SF; IL6 SF | 19.4 | 3.58E-04 | | | 8.3 | 1.22E-03 | 21.6 | 6.84E-03 |
| IL13RA2 | (-) Regulator of IL-13 Signaling (12642602); Th2-Associated (17697639) IL6Ra-bind SF | 3.3 | 5.25E-02 | | | | | 5.0 | 7.15E-03 |
| IL17C | IL-17RE Ligand (21993849); IL17 SF | | | | | | | | |
| IL17RD | Positive Regulator of IL17 Receptor Signaling; IL17 R DN SF | 2.0 | 2.03E-02 | | | | | | |
| IL18 | Th1-Associated (10679398); IL1 SF | 2.3 | 7.08E-03 | | | | | | |
| IL1A | Positive Regulator of Inflammation; IL1 SF | 3.6 | 1.30E-03 | | | | | 2.4 | 1.55E-03 |
| IL1B | Positive Regulator of Inflammation; IL1 SF | 5.5 | 1.20E-03 | | | | | | |
| IL1R2 | IL1B Decoy Receptor; M2-associated (8786316); I-set SF; Ig SF | 10.3 | 2.46E-06 | | | 3.8 | 1.61E-03 | 6.1 | 1.51E-06 |
| IL1RAP | Th1-Associated (10925275); Ig SF; TIR 2 SF | 2.9 | 2.14E-03 | | | | | | |
| IL26 | STAT1 Signaling (14764663); STAT3 Signaling (14764663); Th17-Associated (17676044) | 4.1 | 2.96E-03 | | | | | | |
| IL33 | Th2-Associated (16286016); IL1 SF; IL33 SF | 2.0 | 9.72E-04 | | | 1.7 | 1.40E-02 | | |
| IL36A | Positive Regulator of Inflammation (23029241); IL1 SF | 22.7 | 3.90E-04 | | | 6.8 | 6.44E-03 | 7.2 | 2.58E-03 |
| IL36B | Positive Regulator of Inflammation (16646978); IL1 SF | | | | | | | 30.8 | 1.02E-02 |
| IL6 | Positive Regulator of Inflammation; Th2-Associated (12431386); IL6 SF | 6.5 | 1.29E-04 | | | | | | |
| MDK | Cytokine; PTN MK N SF | | | | | | | 2.8 | 4.44E-04 |
| NRG1 | Cytokine (12204892); Ig SF; EGF CA SF; Neuregulin SF | 4.3 | 8.21E-05 | | | | | 3.8 | 2.41E-02 |
| OSM | Positive Regulator of Inflammation (12496442); LIF OSM SF | 4.4 | 1.92E-04 | | | 2.4 | 1.97E-02 | | |
| OSMR | Type I Cytokine Receptor Family; IL6Ra-bind SF | 2.0 | 1.41E-04 | | | 1.6 | 1.24E-02 | | |
| PTN | Cytokine; PTN MK N SF | | | | | | | 1.9 | 1.03E-02 |
| TNFRSF10B | Positive Regulator of Apoptosis (9311998); DD SF; TNFR SF | 1.8 | 3.08E-03 | | | | | | |
| TNFRSF11A | TNFR SF | 1.7 | 3.61E-02 | | | | | | |
| TNFRSF11B | Crohn's Disease (15803021); Decoy Receptor; DD SF; TNFR SF | 4.6 | 1.51E-04 | | | 3.9 | 5.64E-05 | | |
| TNFRSF12A | Positive Regulator of Apoptosis (21525013); Wound Healing (11728344); TNFR SF | 5.0 | 6.86E-10 | 2.0 | 2.26E-02 | 2.5 | 1.07E-04 | | |
| TNFRSF26 | TNFR SF | | | | | | | 2.5 | 2.44E-02 |
| TNFRSF6B | Decoy Receptor; Th2-Associated (14657214); TNFR SF | 2.4 | 4.77E-03 | | | | | | |
| TNFRSF8 | TNFRSF8 Receptor; Th2-associated (9036953); TNFR SF | | | | | | | 4.0 | 2.04E-02 |
| TNFSF15 | Th1-Associated (14568967); TNF SF | 1.8 | 2.54E-02 | | | | | | |
| TNFSF18 | TNFRSF18/GITR Ligand; TNF SF | | | | | | | 3.8 | 3.17E-02 |

| | | | | | | | | | |
|----------|---|-------|----------|------|----------|------|----------|------|----------|
| SRGN | Mast Cell Secretory Granule Protein (15231821); Serglycin SF | 1.8 | 2.61E-03 | 2.1 | 1.18E-05 | | | | |
| MCPT3* | Mast Cell Protease; Tryp SPC SF | 7.3 | 2.80E-02 | | | | | | |
| TPSB2 | Mast Cell Protease; Tryp SPC SF | | | | | | | 2.8 | 2.68E-02 |
| HDC | Biosynthesis of Histamine; Mast Cell Associated; AAT I SF | | | 2.7 | 2.39E-02 | | | | |
| KIT | (+) Positive Regulator of Mast Cell Development (25062998); Ig SF PKC-like SF | | | 2.3 | 1.73E-02 | | | | |
| | M2-Macrophage Associated | | | | | | | | |
| ARG1 | Antiparasitic Response (19764983); M2-associated (5879104); Arginase HDAC SF | 122.6 | 4.56E-05 | | | 16.6 | 8.41E-04 | 30.1 | 2.28E-07 |
| CD163 | PRR (18849484); M2-associated (15491976); SRCR SF | 1.9 | 4.34E-02 | | | 1.9 | 2.29E-02 | | |
| CHIA | Antiparasitic Response (15618176); Th2-Associated (11553626); GH18 Chitinase Like SF | 2.3 | 3.56E-02 | | | | | | |
| CLEC10A | M2-associated (15591125); PRR (15802303); CLECT SF | 3.6 | 2.24E-02 | | | 2.9 | 3.05E-02 | | |
| F13A1 | Coagulation; M2-associated (19105661); Transglutaminase SF | 4.4 | 1.41E-09 | 2.1 | 7.07E-03 | 2.1 | 1.19E-03 | | |
| IL1R2 | IL1B Decoy Receptor; M2-associated (8786316); I-set SF; Ig SF | 10.3 | 2.46E-06 | | | 3.8 | 1.61E-03 | 6.1 | 1.51E-06 |
| IRAK3 | IL-1 Receptor-associated Kinase; M2-associated (2109822); DD SF; PKC-like SF | | | | | | | | |
| IRF4 | Antiparasitic Response (20729857); M2-associated (20729857); IRF TF SF | 2.1 | 2.55E-03 | | | | | | |
| MMP12 | Metalloprotease; Th2/M2-Associated (12842850, 22880008); HX SF; ZnMc SF | 101.0 | 2.26E-14 | 7.3 | 1.09E-03 | 13.9 | 7.63E-10 | 9.7 | 4.45E-16 |
| MMP13 | Metalloprotease; M2-Associated (12842850); HX SF; ZnMc SF | 20.2 | 1.77E-06 | | | 11.4 | 2.65E-07 | 27.5 | 9.71E-29 |
| MMP20 | Metalloproteinase; M2-associated (22880008); HX SF; ZnMc SF; PG-binding-1 SF | 7.4 | 4.14E-02 | | | | | | |
| MMP8 | Metalloprotease; M2-associated (26092731); PG binding 1 SF; ZnMc SF; HX SF | 27.1 | 7.94E-03 | | | 11.4 | 3.47E-03 | | |
| MMP9 | Metalloprotease; M2-associated (26377769); PG Binding 1 SF; ZnMc SF; PT SF; HX SF | 8.9 | 1.02E-08 | 3.4 | 3.03E-03 | 2.6 | 6.92E-03 | 9.3 | 1.00E-02 |
| ODC1 | M2-associated (19726720); Ornithine Metabolism; Polyamine Metabolism; PLPDE III SF | | | -1.5 | 1.27E-02 | 1.6 | 4.12E-03 | | |
| OSM | M2a-associated (26801095); LIF OSM SF | 4.4 | 1.92E-04 | | | 2.4 | 1.97E-02 | | |
| PTGS2 | Prostaglandin E2 Biosynthesis; M2-associated (17082649); EGF CA; An Peroxidase-like SF | 2.3 | 9.54E-06 | 1.7 | 6.80E-03 | | | | |
| PTGS2 | Prostaglandin H2 Biosynthesis; M2-associated (28684424); EGF CA; An Peroxidase-like SF | 6.5 | 8.39E-06 | | | 3.4 | 8.84E-04 | 4.0 | 1.30E-07 |
| SERPINB2 | Antiparasitic Response (23630350) M2-associated (23355731); SERPIN SF | 9.8 | 2.12E-04 | | | 3.9 | 1.24E-02 | 16.2 | 4.90E-32 |
| SERPINB6 | M2-associated (23293084); Serine Protease Inhibitor; SERPIN SF | | | | | | | 2.0 | 1.67E-02 |
| SLC7A2 | Arginine Transport (8954799); M2-associated (16670299); Solute Carrier SF | 1.9 | 4.15E-02 | | | | | | |
| TGM2 | M2-associated (23293084); Transglutaminase SF | 2.2 | 3.66E-05 | | | | | 2.2 | 7.15E-03 |
| TIMP1 | Metalloproteinase Inhibitor; M2-associated (21926236); NTR-like SF | 4.3 | 2.48E-09 | | | 2.9 | 2.65E-07 | 3.9 | 2.94E-04 |
| TREM2 | PRR (12847223); Ig SF | | | -2.5 | 4.89E-02 | 3.0 | 7.72E-03 | | |
| | Mucus and Fluid Production | | | | | | | | |
| A3GALT2 | Galactosyltransferase; Glyco Tranf GTA Type SF | 40.6 | 5.54E-03 | | | 9.7 | 1.38E-02 | | |
| AGR2 | Mucin Biosynthesis (24942678); Thioredoxin-like SF | 6.5 | 1.79E-05 | | | 5.7 | 6.15E-07 | 5.6 | 1.73E-11 |
| AQP3 | Glycerol Transport (16079275); Water Transport (16079275); MIP SF | | | | | | | | |
| AQP5 | Water Transporter (9195910); MIP SF | 33.5 | 4.54E-04 | | | 10.2 | 1.63E-03 | | |
| AQP9 | Water Transport; Glycerol Transport (19096786); MIP SF | 5.3 | 1.56E-02 | | | | | | |
| B3GNT6 | Mucin Biosynthesis (26274979); Galactosyl T SF | 3.0 | 2.31E-03 | | | 2.9 | 5.44E-04 | 2.3 | 7.21E-03 |
| CLCA1 | Chloride Ion Transport (8769986); Th2-associated (17898169); CLCA N SF; vWFA SF | 3.2 | 1.07E-03 | | | 2.8 | 6.25E-04 | 3.5 | 9.80E-09 |
| FUT2 | Fucosyltransferase (24062455); Th2-associated (12652082); O-FucT-like SF | | | | | | | 3.1 | 1.38E-03 |
| FUT8 | Mucin Biosynthesis (28122822); O-FucT-like SF; SH3 SF | 1.6 | 5.97E-03 | | | | | | |
| GALNT1 | Mucin Biosynthesis; Glyco Tranf GTA-type SF; RICIN SF | 1.5 | 4.20E-02 | | | | | | |
| GALNT6 | Mucin Biosynthesis (20215525); Glyco Tranf GTA-type SF | 1.7 | 1.20E-02 | | | 2.2 | 3.33E-06 | 2.5 | 5.55E-03 |
| GALNT7 | Mucin Biosynthesis Glyco Tranf GTA-type SF; RICIN SF | 1.9 | 5.18E-04 | | | 1.7 | 2.49E-03 | | |
| GCNT3 | IL-13 Induced (17303715); Mucin Biosynthesis (20816165); Branch SF | 2.7 | 1.21E-03 | | | 2.1 | 7.34E-03 | 2.4 | 4.06E-04 |
| MUC2 | Secreted Gel Forming Mucin (24942678); Th2-associated (14594655); Mucin SF | 5.2 | 7.10E-08 | | | 3.8 | 1.60E-07 | 6.3 | 2.16E-16 |
| | Miscellaneous | | | | | | | | |
| ANXA8 | Anticoagulant (2530088); Annexin SF | 21.8 | 2.21E-07 | | | 7.6 | 1.18E-05 | 34.8 | 6.97E-40 |
| CHI3L1 | GH18 Chitinase Like SF | 13.9 | 2.38E-06 | | | 5.2 | 2.51E-04 | 6.4 | 1.03E-13 |
| CHI3L2 | GH18 Chitinase Like SF | 6.0 | 7.37E-04 | | | | | 4.2 | 4.97E-04 |
| CHIT1 | GH18 Chitinase Like SF | 24.2 | 1.65E-02 | | | | | | |
| CLTC | (-) Regulator of NF-kB Activation (21364927); Clathrin SF | 1.5 | 3.32E-02 | | | | | | |
| FCGBP | Ig Receptor; VWD SF; C8 SF; TIL SF; VWC SF | 2.3 | 2.08E-02 | | | | | | |
| GJA1 | Epithelial Wound Repair (19528242); Connexin SF; Connexin CCC SF; Connexin 43 SF | 2.4 | 6.11E-05 | | | | | | |
| GZMA | Tryp SPC SF | | | 3.0 | 4.54E-04 | | | | |
| GZMB | Tryp SPC SF | 5.5 | 2.79E-04 | 11.2 | 8.54E-08 | | | | |
| IGH@ | Ig SF; Ig Heavy Chain Constant Region SF | 5.7 | 2.70E-05 | | | 2.6 | 1.24E-02 | | |
| IGHG1 | Ig SF; Ig Heavy Chain Constant Region SF | 29.1 | 1.93E-04 | | | 10.3 | 8.11E-04 | 11.1 | 3.80E-06 |
| IGJ | Immunoglobulin J polypeptide; Ig J-Chain SF | 1.8 | 2.63E-02 | | | | | | |
| KLRJ1* | CLECT SF | 10.0 | 5.18E-04 | 9.6 | 1.59E-03 | | | | |
| MYOF | Membrane Regeneration and Repair; C2 SF; FerA SF; FerB SF; DysFN SF | 2.2 | 3.03E-05 | | | 1.9 | 1.39E-04 | | |
| NEUROG3 | (+) Regulator of Enteroendocrine Cell Differentiation (17706959); HLH SF | 5.7 | 1.61E-03 | | | 3.8 | 3.07E-03 | | |
| NLR3 | Inflammasome Associated (21191067); LRR RI SF; P-loop NTPase SF | | | 2.5 | 1.97E-02 | | | | |
| NTRK1 | Allergic Inflammation (25389033); IL-4 Induced; Ig SF; LRRCT SF | 42.0 | 2.62E-07 | 10.6 | 3.53E-03 | | | | |
| PADI1 | (-) Regulator of Inflammation (18710930); PAD SF | 296.4 | 3.51E-03 | | | 51.6 | 6.25E-04 | | |
| PADI3 | PAD SF | 55.7 | 1.75E-02 | | | 19.0 | 4.69E-03 | | |
| PRG4 | HX SF; Somatomedin B SF | 10.7 | 1.39E-02 | | | 13.5 | 3.43E-04 | | |
| S100A10 | Inflammation (16373665); S100 SF | | | | | | | | |
| S100A11 | RAGE Ligand (18331229); S100 SF | | | | | 1.5 | 3.35E-02 | | |
| S100A12 | RAGE Ligand (18331229); Inflammation (12740341); S100 SF | 38.4 | 4.48E-04 | | | 13.4 | 7.36E-04 | 12.8 | 4.09E-05 |
| S100A2 | Eosinophil Chemoattractant (8607858); S100 SF | 7.4 | 9.54E-06 | | | 4.2 | 1.75E-04 | 10.0 | 3.03E-27 |
| S100A3 | S100 SF | 8.0 | 6.29E-03 | | | 4.5 | 2.35E-02 | | |
| S100A6 | RAGE Ligand (18331229); S100 SF | 1.6 | 3.06E-02 | | | 1.6 | 1.55E-02 | | |
| S100A8 | RAGE Ligand; Inflammation (12645005); S100 SF | 38.3 | 5.18E-04 | | | 10.8 | 2.17E-03 | 8.2 | 1.02E-02 |
| S100A9 | RAGE Ligand; Inflammation (12645005); S100 SF | 44.8 | 2.59E-04 | | | 11.0 | 2.03E-03 | 9.8 | 1.83E-03 |
| SCGB2A2 | Lipophilin SF Secretoglobin SF; Uteroglobin SF | 105.1 | 3.14E-07 | | | 17.9 | 4.89E-06 | | |
| SCGB3A1 | IL-4 Induced (16237061); Lipophilin SF Secretoglobin SF; Uteroglobin SF | 8.8 | 1.90E-02 | | | | | | |
| SMPDL3B | (-) Regulator of TLR Signaling (26095358); MPP SF | | | | | | | 2.0 | 1.67E-02 |
| SOCS3 | Th2-associated (11907070); Th17-associated (16698929) | 2.5 | 1.07E-03 | | | | | | |
| THBD | Th2 Associated (189478630); CLECT SF; EGF CA SF; Tme5 EGF-like SF | 1.8 | 2.09E-02 | | | 1.9 | 3.32E-03 | | |
| TIGIT | (-) Regulator of DC Function (19011627); TFH Cell Associated (19197944); Ig SF | 2.5 | 3.55E-03 | 2.8 | 3.39E-04 | | | | |
| TNIP3 | (-) Regulator of TLR4 Signaling (17088249); Tape Meas Lam C SF; BAN SF | 7.3 | 4.56E-05 | | | 3.5 | 3.16E-03 | 4.5 | 5.90E-06 |
| TRAIIP | (-) Regulator of TLR Signaling (14676304); RING Ubox SF | | | | | 1.9 | 5.08E-03 | | |
| VSTM1 | (-) Regulator of Monocyte/Neutrophil Function (20375307, 23436183); Ig SF | 2.3 | 1.95E-02 | | | 2.3 | 7.89E-03 | | |
| WNT7A | Wound healing (15802269); WNT SF | | | | | | | | |
| XDH | (+) Regulator of Inflammation (h) (20632067); Fer2 2 SF; CO Deh Flav C SF; Ald Xan Dh C2 SF | 22.8 | 3.03E-02 | | | | | | |
| | Neurotransmitters and Receptors | | | | | | | | |
| ABAT | GABA aminotransferase; AAT I SF | 2.7 | 2.61E-02 | | | 3.1 | 1.97E-03 | 3.2 | 1.73E-05 |
| AVPR1B | Arginine Vasopressin Receptor; GPCR SF | 62.6 | 5.42E-03 | | | | | | |
| BDKRB1 | Bradykinin Receptor; GPCR SF | 4.0 | 1.65E-03 | | | | | 4.6 | 1.70E-02 |
| DOK7 | Postsynaptic Differentiation; PH-like SF | | | | | | | | |
| DRD2 | Dopamine receptor D2; Neurotransmitter Receptor; GPCR SF | | | | | | | | |
| GABRD | GABA Receptor; Neurotransmitter Receptor; Neur Chan LBD SF; Neur Chan Memb SF | 2.5 | 4.65E-02 | | | 3.4 | 4.54E-04 | | |
| GABRP | GABA Receptor; Neur Chan LBD SF Neur Chan Memb SF | | | | | | | 15.7 | 1.59E-03 |

Supplemental Table S8: Clustered Down-regulation of Physiology and Immunology DEGs

| Gene | Functional Categorization | S2 DPI w worms vs Control Fold | EDGE FDR Adj p value | S2 DPI w/o worms vs Control Fold | EDGE FDR Adj p value | (S2 DPI Inf w/o worms vs w Worms Fold | EDGE FDR Adj p value | (Z1 DPI Inf vs Control) Fold | EDGE FDR Adj p value |
|--|--|--------------------------------|----------------------|----------------------------------|----------------------|---------------------------------------|----------------------|------------------------------|----------------------|
| Antigen Processing and Presentation | | | | | | | | | |
| ADAM23 | Positive Regulator of Antigen Presentation (27317750); ZnMc SF | | | | | | | | |
| B2M | Positive Regulator of Surface Expression of MHC Class I (16181333); Ig SF | -2.0 | 5.66E-04 | | | | | | |
| CD74 | MHC Chaperone (22306692); MHC2-interact SF | -2.5 | 2.92E-04 | | | -2.0 | 7.72E-03 | | |
| CITA | Positive Regulator of MHC Class I and II Expression (14678199, (11486010); LRR SF | | | | | -1.7 | 4.54E-02 | | |
| CLEC4F | Glycolipid Antigen Presentation (23762286) | -4.6 | 4.26E-02 | | | | | | |
| CTSD | Antigen Processing and Presentation (16920965); Pepsin Retropepsin-like SF | | | | | -1.6 | 1.68E-02 | | |
| ERAP2 | Antigen Processing and Presentation (12799365); Type 2 IFN Induced (12799365); GluZincin SF | -1.6 | 4.60E-02 | | | | | | |
| LGALS3BP | Antigen Processing and Presentation (15231701); SRCR SF | -1.9 | 3.18E-02 | | | | | | |
| PLCB2 | (+) Regulator of B Cell Activation (20871625); PH-like SF; EF-hand-like SF; PI-PLC GDP SF SF; C2 SF | -2.0 | 1.74E-03 | | | | | | |
| PSMB10 | Immunoproteasome Protease (9551082); Ntn Hydrolase SF; Pr Beta C SF | -1.8 | 3.20E-03 | | | | | | |
| PSMB8 | Immunoproteasome Protease; Ntn Hydrolase SF; Pr Beta C SF | -1.6 | 2.91E-02 | | | | | | |
| PSMB9 | Immunoproteasome Protease; Ntn Hydrolase SF; Pr Beta C SF | -1.8 | 9.65E-03 | | | | | | |
| PSME1 | Antigen Processing and Presentation (12200048); PA28 Alpha SF; PA28 Beta SF | -1.6 | 5.26E-03 | | | | | | |
| SLA-11 | MHC Class I SF | -2.3 | 1.08E-04 | | | -1.6 | 4.46E-02 | | |
| SLA-2 | MHC Class I SF | | | | | -1.7 | 5.02E-02 | | |
| SLA-3 | MHC Class I SF | -2.3 | 1.89E-04 | | | | | -1.8 | 3.72E-02 |
| SLA-8 | MHC Class I SF | -1.6 | 1.98E-02 | | | -1.6 | 4.54E-02 | | |
| SLA-DMA | MHC Class II SF | -2.1 | 4.61E-03 | | | | | -1.9 | 1.99E-02 |
| SLA-DMB | MHC Class II SF | -2.2 | 8.10E-04 | | | -1.7 | 2.70E-02 | -2.4 | 3.61E-04 |
| SLA-DOA | MHC Class II SF | -2.4 | 3.71E-03 | | | | | | |
| SLA-DQA1 | MHC Class II SF | -2.3 | 3.27E-03 | | | -2.0 | 1.33E-02 | | |
| SLA-DQB1 | MHC Class II SF | -2.3 | 1.13E-02 | | | | | -2.5 | 1.55E-03 |
| SLA-DRA | MHC Class II SF | -2.4 | 1.06E-03 | | | -2.1 | 5.53E-03 | | |
| SLA-DRB1 | MHC Class II SF | -2.2 | 5.60E-03 | | | -2.0 | 1.25E-02 | | |
| TAP1 | Peptide Transporter; ABC Membrane SF | -1.9 | 5.73E-03 | | | -1.7 | 2.23E-02 | | |
| TAP2 | Peptide Transporter; ABC Membrane SF | -1.6 | 1.31E-02 | | | | | | |
| Cytokines, Chemokines and Receptors | | | | | | | | | |
| ADIPOQ | Adipocytokine; C1q SF | -4.2 | 5.00E-04 | | | | | -2.2 | 4.06E-03 |
| ANGPTL4 | Adipocytokine; FReD SF | -2.9 | 1.19E-03 | -2.0 | 4.70E-02 | | | | |
| BMP3 | Bone Morphogenetic Protein (BMP) Family; TGFβ SF | | | | | | | -2.5 | 2.94E-03 |
| CCL2 | CCR2 Ligand; CCL Chemokine SF | | | | | | | -2.0 | 1.38E-03 |
| CCL21 | CCR7 Ligand; CCL Chemokine SF | -1.7 | 4.86E-02 | | | | | | |
| CCL3L1 | CCL Chemokine SF | | | | | | | -5.6 | 2.84E-03 |
| CCL3L2 | CCL Chemokine SF | -5.4 | 6.08E-03 | | | | | -10.6 | 5.90E-03 |
| CCL4 | CCR5 Ligand; CCL Chemokine SF | -2.4 | 1.16E-02 | | | | | | |
| CCL8 | CCR1 Ligand; CCL Chemokine SF | -2.6 | 7.80E-03 | | | | | -2.8 | 4.24E-02 |
| CCR5 | CCL3 Receptor; CCL4 Receptor; CCL5 Receptor; CCL Chemokine Receptor SF | -1.8 | 5.37E-03 | | | | | | |
| CCR9 | CCL25 Receptor; CCL Chemokine Receptor | -3.0 | 5.47E-02 | | | | | -5.8 | 1.14E-02 |
| CNTRF | Cytokine Receptor (10812968); FN3 SF; Ig SF | -3.5 | 4.40E-04 | | | -2.9 | 3.11E-03 | | |
| CSF1 | Cytokine; Positive Regulator of Macrophage Development. | -1.5 | 3.58E-02 | | | -1.5 | 1.68E-02 | | |
| CSF1R | CSF1 Receptor | -1.7 | 3.70E-03 | | | -1.5 | 4.54E-02 | | |
| CSF2RB | GM-CSF/IL-3/IL-5 receptor Common Beta-Chain; Erythropoietin Receptor SF; FN3 SF; IL6Ra-bind SF | | | | | -1.5 | 4.36E-02 | | |
| CXCL10 | Type 2 IFN Induced; CXCR3 Ligand; CXC Chemokine SF | -3.4 | 3.22E-02 | | | -4.4 | 7.18E-03 | | |
| CXCL11 | Type 2 IFN Induced; CXCR3 Ligand; CXC Chemokine SF | -4.8 | 3.33E-02 | | | | | | |
| CXCL12 | CXCR4 Ligand; CXC Chemokine SF | -2.7 | 6.31E-04 | | | -2.8 | 2.48E-04 | -2.3 | 5.03E-03 |
| CXCL13 | CCL10 Ligand; CXCR5 Ligand; CXC Chemokine SF | | | | | | | -5.8 | 5.77E-08 |
| CXCL9 | Type 2 IFN Induced; CXCR3 Ligand; CXC Chemokine SF | -7.5 | 6.02E-04 | | | -5.7 | 3.65E-03 | -6.1 | 7.08E-08 |
| CXCR3 | CXCL9 Receptor; CXCL10 Receptor; CXCL11 Receptor; CXCL Chemokine Receptor SF | -2.2 | 1.38E-02 | | | | | | |
| EBI3 | FN3 SF | -2.0 | 4.52E-02 | | | | | | |
| FLT3LG | Flt3 Lig SF | -1.8 | 3.71E-03 | | | | | | |
| GDF5 | Bone Morphogenetic Protein (BMP) Family; TGFβ SF | -3.8 | 1.25E-02 | -3.3 | 1.09E-03 | | | | |
| IGF2 | IIGF-like SF | -3.2 | 5.66E-04 | | | -2.2 | 2.80E-02 | | |
| IL10RA | Cytokine Receptor; Interferon-binding SF | -1.9 | 8.53E-04 | | | -1.5 | 3.17E-02 | | |
| IL12B | Cytokine; IL12p40 SF | -4.7 | 1.02E-02 | | | | | | |
| IL12RB2 | IL-12 Receptor; Th1-Associated (10666772); Lep Receptor Ig SF | -2.3 | 4.34E-02 | | | | | | |
| IL15 | Th1-Associated (12759422); IL15 SF; IL2G Receptor Binding SF | | | | | | | -2.7 | 3.09E-02 |
| IL17RA | IL-17 Receptor; TIR 2 SF | -1.5 | 1.36E-02 | | | | | | |
| IL2RB | IL2 Receptor; IL15 Receptor; FN3 SF | | | | | -1.7 | 2.69E-02 | | |
| IL34 | Cytokine; IL34 SF | -2.5 | 3.63E-04 | | | -2.1 | 4.12E-03 | | |
| KIT | Ig SF; PKC-like SF | | | | | | | -2.3 | 2.04E-02 |
| LIFR | LIF Receptor; FN3 SF | -2.1 | 4.05E-04 | | | -1.7 | 7.18E-03 | -2.6 | 3.03E-05 |
| LTBP3 | TGFβ Binding Protein EGF CA SF | -1.6 | 4.59E-02 | | | | | | |
| LTBP4 | TGFβ Binding Protein EGF CA SF | -2.2 | 9.11E-05 | | | -1.8 | 5.61E-03 | | |
| MDK | Cytokine; (+) Regulator of Inflammation (30217121); PTN MK N SF | -2.0 | 1.75E-02 | | | | | | |
| PDGFC | Angiogenesis (20566880); CUB SF; PDGF SF | | | | | | | -2.3 | 2.70E-03 |
| PF4 | CXC Chemokine SF | | | | | | | -3.2 | 1.71E-02 |
| PGF | PDGF SF | -1.9 | 4.93E-02 | | | | | | |
| RARRES2 | Adipocytokine (17767914) | -1.6 | 4.83E-02 | | | | | | |
| THNSL2 | Cytokine (19877052); Trp-synth-beta II SF | -2.3 | 1.15E-03 | | | | | | |
| TNFSF11 | Positive Regulator of Microfold Cell Differentiation (22778137); TH1-Associated (14607948); TNF SF | | | | | | | -4.0 | 1.83E-03 |
| TNFSF13B | (+) Regulator of B Cell Activation (16797504); Th1-Associated (15843552); TNF SF | | | | | | | -2.5 | 2.69E-04 |
| XCL1 | Th1-associated (14573634); XCR1 Receptor Ligand | -5.2 | 1.96E-06 | | | -2.7 | 5.72E-03 | -3.3 | 3.63E-03 |
| Extracellular Matrix and Remodeling | | | | | | | | | |
| ADAM1A | Matelloprotease; Pep M12B Propep SF; ZnMc SF; Reprolysin SF; Disintegrin SF; ADAM CR SF | | | | | | | -52.9 | 1.87E-02 |
| ADAMTS19 | Matelloprotease; TSP 1 SF | | | | | | | -2.6 | 1.33E-02 |
| ADAMTS5 | Matelloprotease; Pep M12B Propep SF; ZnMc SF; TSP 1 SF; ADAM Spacer1 SF | | | | | | | -2.2 | 1.84E-02 |
| ADAMTS8 | Matelloprotease; TSP 1 SF | | | | | -1.9 | 1.07E-02 | | |
| ADAMTS15 | Matelloprotease; TSP 1 SF | -2.1 | 3.76E-02 | | | | | | |
| ANPEP | Aminopeptidase; GluZincin SF | -5.2 | 3.11E-04 | -2.5 | 4.13E-02 | | | | |
| ASTL | Matelloprotease (15087446); ZnMc SF | -37.2 | 2.34E-02 | | | | | -49.0 | 2.75E-02 |
| BSG | Extracellular Matrix Remodeling (26084217); Treg-associated (23665204); Ig SF; KU SF | | | | | -1.5 | 2.27E-02 | | |
| COL1A1 | Collagen SF | | | | | | | -1.7 | 3.72E-02 |
| COL22A1 | Collagen SF | | | | | | | -56.8 | 1.34E-02 |
| COL25A1 | Collagen SF | | | | | | | -5.6 | 7.28E-04 |
| COL4A3 | Collagen SF | -2.4 | 4.44E-02 | | | | | | |
| COL4A6 | Collagen SF | -1.6 | 3.19E-02 | | | -1.6 | 4.50E-02 | | |
| COL6A5 | Collagen SF | | | | | | | -2.0 | 1.50E-02 |
| COL6A6 | Collagen SF | -7.8 | 1.07E-07 | | | -5.7 | 3.03E-06 | -5.7 | 3.51E-08 |
| CST3 | Cysteine Protease Inhibitor; Extracellular Matrix Formation/Degradation (19468292); Cystatin (CY) SF | | | | | -1.9 | 7.80E-03 | -2.3 | 3.93E-04 |
| CSTA | Protease Inhibitor; CY SF | -1.9 | 2.56E-02 | | | | | | |
| CTBS | Asn-linked Glycoprotein Catabolism; GH18 Chitinase-like SF | -3.6 | 8.38E-03 | | | -2.9 | 4.10E-02 | | |

| | | | | | | | | | | | |
|-----------|--|-------|----------|--|--|--|--|-------|----------|------|----------|
| IFI27 | Type 1 IFN Induced (20939681); Antiviral Response (27194766); Ifi-6-16 SF | -5.8 | 7.91E-04 | | | | | -3.9 | 1.12E-02 | | |
| IFI44 | Type 1 IFN Induced (7925411); Antiviral Immune Response (22896602); TLD SF | -2.9 | 1.80E-02 | | | | | -2.7 | 2.55E-02 | | |
| IFI44L | Type 1 IFN Induced (21478870); Antigen Processing and Presentation (11021531); Ras-like GTPase SF | -2.3 | 3.75E-03 | | | | | -2.0 | 1.59E-02 | | |
| IFITM1 | Type 1 IFN Induced (14980080); Antiviral Immune Response (22344284); CD225 SF | -2.6 | 1.45E-02 | | | | | | | | |
| IFITM1L2* | CD225 SF | -2.3 | 6.10E-05 | | | | | -1.7 | 8.91E-03 | | |
| IRF8 | Type 1 IFN-Induced; Type 1 IFN Signaling (15864272); IRF SF; IRF4 Subfamily (11997525) | -1.6 | 1.94E-02 | | | | | | | | |
| MAP2K6 | Type 1 IFN Induced (15644321); Antiviral Response (15229216); PKC-like SF | -1.8 | 3.77E-02 | | | | | -1.8 | 4.90E-02 | | |
| MOV10 | Type 1 IFN Induced (21478870); Antiviral Response (26842467); AAA 11 SF; UvrD C 2 SF | -1.7 | 1.22E-03 | | | | | -1.5 | 1.20E-02 | | |
| MPEG1 | Type 1 and 2 IFN Induced (23257510); Antibacterial Responses (23257510); MACPF SF | -2.2 | 4.93E-03 | | | | | -2.1 | 5.72E-03 | -2.1 | 7.99E-03 |
| OASL | Type 1 IFN-Induced (10087211); Antiviral Response (22531715); NT Pol-beta-like SF; OAS1 C SF; UBQ SF | -14.4 | 5.68E-03 | | | | | -12.1 | 1.20E-02 | | |
| PARP9 | Type 2 IFN Induced (16809771); Antiviral Response (26479788); Macro SF; ADP Ribosyl SF | | | | | | | -1.9 | 1.04E-03 | | |
| RNF213 | Type 1 IFN Induced (10547268); RING Ubox SF | -1.8 | 4.61E-02 | | | | | -1.8 | 3.66E-02 | | |
| RSAD2 | Type 1 IFN-induced (9391139); Antiviral Immune Response (20308629, 22377585); Viperin SF | -4.4 | 2.06E-02 | | | | | -4.3 | 2.28E-02 | | |
| THAP12 | Type 1 IFN Induced (21910972); Antiviral Response (21910972); THAP SF; Dimer Tnp hAT SF | -10.5 | 4.27E-02 | | | | | -13.4 | 2.27E-02 | | |

Supplemental Table S9: Clustered Metabolism Genes (DEGs) Up-regulated

| Gene | Functional Categorization | S2 DPI w vs Control Fold | EDGE FDR Adj p value | S2 DPI w/o worms vs Control Fold | EDGE FDR Adj p value | (S2 DPI Inf w/o worms vs Worms Fold | EDGE FDR Adj p value | (21 DPI Inf vs Control) Fold | EDGE FDR Adj p value |
|---|--|--------------------------------|----------------------------|--|----------------------------|--|----------------------------|------------------------------------|-------------------------|
| Amino Acid Metabolism or Transport | | | | | | | | | |
| ARG1 | Arginine Metabolism (3540966); M2-associated (5879104); Arginase HDAC SF | 122.6 | 4.56E-05 | | | 16.6 | 8.41E-04 | | |
| ARG2 | Arginine Metabolism (16128822); Arginase HDAC SF | 1.7 | 3.31E-02 | | | 1.6 | 2.16E-02 | | |
| BCAT1 | BCAA Catabolism (6933702); Glycolysis (28699638); PRK13357 SF | 2.4 | 4.81E-04 | | | 1.9 | 5.18E-03 | | |
| CBS | Cysteine Metabolism (19010420); Serine Metabolism; Trp-synth-beta II SF; CBS Pair SF | 3.4 | 1.61E-03 | | | 3.5 | 7.42E-05 | 5.5 | 7.18E-05 |
| GNMT | Homocysteine Metabolism (21411609); AdoMet MTases SF | | | | | | | 4.3 | 2.10E-02 |
| IL4I1L | Putative L-amino acid oxidase; SDR SF | 161.2 | 3.98E-05 | | | 26.0 | 1.39E-04 | 437.7 | 1.59E-14 |
| ODC1 | M2-associated (19726720); Ornithine Metabolism (2317811); Polyamine Metabolism; PLPDE III SF | | | -1.5 | 1.27E-02 | 1.6 | 4.12E-03 | | |
| PHGDH | Serine Biosynthesis (27110680); SerA SF | 5.1 | 3.92E-05 | | | 3.3 | 5.01E-04 | 5.0 | 9.01E-04 |
| PSAT1 | Serine Biosynthesis (12633500); AAT I SF | 7.2 | 3.12E-04 | | | 3.9 | 3.89E-03 | 20.6 | 4.69E-11 |
| SDSL | Serine Metabolism (16580895); Threonine Metabolism (16580895); Trp Synth beta II SF | 39.6 | 1.38E-02 | | | | | | |
| SHMT2 | Glycine Biosynthesis (25619277); Folate Biosynthesis; Serine Biosynthesis | 2.0 | 2.65E-05 | | | 1.5 | 1.06E-02 | | |
| SLC12A8 | Amino Acid Transport (19472210); Polyamine Transport (19472210); Solute Carrier SF | 3.5 | 7.40E-04 | | | 3.1 | 3.65E-04 | | |
| SLC16A10 | Phenylalanine/Tryptophan/Tyrosine Transport (23045339); Solute Carrier SF | 1.8 | 3.61E-02 | | | | | | |
| SLC1A2 | Glutamate Transport (7521911); SDF SF; Solute Carrier SF | 3.0 | 2.04E-03 | | | 2.1 | 2.44E-02 | | |
| SLC1A4 | Alanine/Cysteine/Proline Transport (8101838, 11824937; 14502423); Solute Carrier SF | 2.5 | 1.36E-03 | | | | | | |
| SLC1A5 | Glutamate/Glutamine Transport (21757002); Solute Carrier SF | 1.8 | 8.53E-04 | | | 1.6 | 5.72E-03 | | |
| SLC38A2 | Alanine/Asparagine/Cysteine/Glutamine Transport (12845534); Solute Carrier SF | 1.8 | 2.90E-02 | | | | | | |
| SLC3A2 | BCAA Transport (9751058); Tryptophan Transport; Tyrosine Transport; Solute Carrier SF | 1.8 | 1.83E-03 | | | | | | |
| SLC6A9 | Glycine Transport (8183239); Solute Carrier SF | 1.8 | 1.29E-02 | | | | | | |
| SLC7A1 | Arginine Transport (21302286); Lysine Transport (21302286); Solute Carrier SF | 1.6 | 1.25E-02 | | | 1.5 | 3.05E-02 | | |
| SLC7A11 | Cystine Transport (10206947); Glutamate Transport (10206947); Solute Carrier SF | | | | | 3.7 | 3.60E-02 | 4.3 | 6.75E-07 |
| SLC7A2 | Arginine Transport (8954799); M2-associated (16670299); Solute Carrier SF | 1.9 | 4.15E-02 | | | | | | |
| SLC7A3L11* | Putative Amino Acid Transporter; Solute Carrier SF | | | | | | | 188.2 | 1.59E-03 |
| SLC7A5 | BCAA Transport (9751058); Solute Carrier SF | 2.7 | 7.21E-06 | | | 1.9 | 1.40E-03 | 3.3 | 1.30E-03 |
| SLC7A6 | Arginine Transport (19562367); Solute Carrier SF | 1.7 | 2.15E-03 | | | | | | |
| SLC9C1 | Sodium-hydrogen Exchanger (14634667); Solute Carrier SF | | | | | | | 4.1 | 7.81E-04 |
| TAT | Bioconversion of L-Tyrosine into p-Hydroxyphenylpyruvate; AAT I SF | 4.2 | 4.00E-02 | | | | | 6.9 | 3.49E-02 |
| Carbohydrate Metabolism or Transport | | | | | | | | | |
| AACS | Biosynthesis of Acetyl-Coenzyme A (20102333); AFD Class I SF | 2.0 | 4.99E-05 | | | 1.8 | 1.18E-04 | | |
| ACAT2 | Biosynthesis of Acetyl-Coenzyme A; Thiolase N SF | 3.5 | 1.27E-10 | | | 2.5 | 4.51E-08 | | |
| ACLY | Glycolysis; Lipid Biosynthesis (23932781); TCA Cycle; CCL SF | 2.2 | 5.17E-06 | | | 1.9 | 1.76E-05 | | |
| ALDOC | Fructose Metabolism; Glycolysis; Aldolase Class I SF | 1.6 | 5.08E-02 | | | 1.7 | 1.06E-02 | | |
| BCAT1 | Glycolysis (28699638); PRK13357 SF | 2.4 | 4.81E-04 | | | 1.9 | 5.18E-03 | | |
| DERL3 | Negative Regulator of SLC2A1 Expression (24699711); DER1 SF | 2.2 | 2.74E-04 | | | 1.7 | 7.70E-03 | | |
| GFPT1 | Biosynthesis of Glucosamine 6-phosphate (1460020); Gn AT II SF; SIS SF | 2.2 | 1.21E-05 | | | 1.7 | 3.70E-03 | | |
| GS2 | Glycogen Synthase SF | | | | | 6.0 | 4.66E-02 | 11.9 | 5.62E-03 |
| PKC2 | Gluconeogenesis; Biosynthesis of Phosphoenolpyruvate (4291786); TCA Cycle; PEPCk HprK SF | 2.0 | 1.77E-03 | | | 2.0 | 3.22E-04 | | |
| HK2 | Glycolysis; Biosynthesis of Glucose-6-phosphate (19558793); NBD Sugar Kinase SF; Hexokinase 2 SF | 8.6 | 2.40E-06 | | | 4.2 | 1.78E-04 | 3.3 | 1.33E-05 |
| PFKFB2 | Biosynthesis of Fructose-2,6-bisphosphate; Glycolysis; P-loop NTPase SF; HP SF | 1.9 | 3.58E-02 | | | | | | |
| PFKFB3 | Biosynthesis of Fructose-2,6-bisphosphate; Glycolysis; P-loop NTPase SF; HP SF | 3.2 | 4.64E-06 | | | 2.2 | 5.86E-04 | 2.5 | 7.15E-03 |
| PGK1 | Biosynthesis of 3-phosphoglycerate; Glycolysis; Phosphoglycerate Kinase SF | 1.8 | 1.24E-03 | | | 1.5 | 1.73E-02 | | |
| PGM2 | Biosynthesis of Ribose 5-phosphate; Glycolysis (17804405); Phosphohexomutase SF | 1.6 | 7.93E-03 | | | | | | |
| PGM3 | Biosynthesis of UDP-N-acetylglucosamine (11004509); Phosphohexomutase SF | 2.1 | 7.37E-05 | | | 1.8 | 9.17E-04 | | |
| PKM | Biosynthesis of Pyruvate; Glycolysis (12843653); Pyruvate Kinase SF | 1.9 | 3.11E-04 | | | 1.7 | 1.40E-03 | 2.2 | 2.62E-02 |
| SDS | Biosynthesis of Pyruvate; Glycolysis; Serine/Threonine Catabolism; Trp Synth Beta II SF | 5.6 | 1.53E-02 | | | | | 5.7 | 8.06E-05 |
| SLC25A35 | Isopropylmalate Transport (18682385); Solute Carrier SF | | | | | 2.0 | 9.64E-03 | | |
| SLC2A3 | Glucose Transport (20209635); Solute Carrier SF | 3.4 | 1.42E-12 | 2.7 | 1.71E-10 | | | | |
| SLC37A3 | Glucose-6-phosphate Transport (21949678); Solute Carrier SF | 1.5 | 7.96E-03 | | | | | | |
| SLC50A1 | Glucose Transport (23506865); Solute Carrier SF | | | | | 1.8 | 9.18E-04 | | |
| SLC5A1 | Glucose/Fructose/Mannose Transport (22212718); Solute Carrier SF | 2.2 | 2.73E-04 | | | 1.7 | 6.38E-03 | | |
| TKTL1 | Glycolysis (26273330) | | | 6.4 | 1.49E-02 | | | | |
| Lipid Metabolism or Transport | | | | | | | | | |
| ABCA12 | Cholesterol Transport (23931754); ABC ATPase SF | 4.1 | 1.91E-03 | | | | | 2.3 | 4.40E-02 |
| ABCA5 | Macrophage Cholesterol Metabolism (20382126); ABC ATPase SF | 2.0 | 4.93E-03 | | | | | | |
| ACACA | Fatty Acid Biosynthesis (20457939); Acetyl-CoA Carboxylase SF; Biotinyl-lipoyl Domains SF | 1.6 | 4.83E-03 | | | | | | |
| ACSL3 | Fatty Acyl-CoA Ester Biosynthesis; AFD Class I SF; Acyl-CoA Synthetase SF | 2.0 | 8.07E-05 | | | 1.7 | 2.03E-03 | | |
| ACSL4 | Fatty Acyl-CoA Ester Biosynthesis; AFD Class I SF; Acyl-CoA Synthetase SF | 1.5 | 3.29E-02 | | | | | | |
| AOAH | Lipid Metabolism (1883828); SGNH Hydrolase SF; SapB 2 SF | 1.6 | 5.28E-02 | 1.7 | 2.02E-02 | | | | |
| APOBR | Lipoprotein Receptor; Neuromodulin N SF; Na Ca Ex SF | | | 1.7 | 3.48E-02 | | | | |
| CYP51A1 | Cholesterol Metabolism (12464255); Cytochrome P450 | 2.1 | 1.08E-04 | | | 1.6 | 5.76E-03 | | |
| CYP7A1 | Cholesterol Metabolism (19965590); Cytochrome P450 | 12.7 | 4.64E-02 | | | | | | |
| DGAT2 | Triglyceride Synthesis (11481335); NAT SF Superfamily | | | | | 1.8 | 3.05E-02 | | |
| DHCR7 | Cholesterol Biosynthesis (9465114); PEMT SF | 1.9 | 3.19E-04 | | | 1.6 | 1.99E-03 | | |
| EBP | Cholesterol Biosynthesis (17498944); EBP SF | 2.6 | 1.17E-05 | | | 2.3 | 4.62E-06 | | |
| ELOVL6 | Fatty Acid Metabolism (19259639); ELO SF | | | | | 2.4 | 1.46E-05 | | |
| FABP3 | Long-chain Fatty Acid Transport (3421901); Lipocalin SF | | | | | 2.3 | 1.30E-03 | 3.3 | 3.51E-08 |
| FADS1 | Fatty Acid Desaturase; Cyt-b5 SF; Membrane-FADS-like SF | 2.4 | 6.98E-08 | | | 1.8 | 8.80E-05 | | |
| FADS2 | Fatty Acid Desaturase; Cyt-b5 SF; Membrane-FADS-like SF | 2.8 | 2.38E-06 | | | 2.3 | 1.63E-05 | | |
| FASN | Fatty Acid Biosynthesis (7835891); Acyl Transf 1 SF; NADB Rossmann SF | 2.1 | 1.09E-04 | | | 1.7 | 3.60E-03 | | |
| FDFT1 | Cholesterol Biosynthesis (19054015); Isoprenoid Biosynthesis C1 SF | 1.9 | 3.52E-04 | | | 1.9 | 1.14E-05 | | |
| FDPS | Cholesterol Biosynthesis (8188698); Isoprenoid Biosyn C1 SF | 2.2 | 8.28E-05 | | | 1.8 | 2.52E-03 | 2.0 | 3.53E-02 |
| FFAR2 | Acetate/Butyrate/Propionate Receptor (12711604, 27966553, 19574715); GPCR SF | 3.0 | 5.18E-04 | 3.6 | 1.18E-05 | | | | |
| FFAR4 | Fatty Acid Receptor (20813258); GPCR SF | 2.3 | 1.81E-02 | | | 2.3 | 5.35E-03 | 2.3 | 2.68E-02 |
| GPAT3 | Triglyceride Biosynthesis (20181984); LPLAT SF | 2.8 | 1.40E-04 | | | 2.5 | 7.03E-05 | | |
| HDLBP | Cholesterol Metabolism; KH-I SF | | | | | | | 2.1 | 1.81E-02 |
| HMGCR | Cholesterol Biosynthesis; MMPL SF; HMG-CoA Reductase SF | 1.9 | 1.25E-03 | | | | | 1.9 | 1.78E-04 |
| HMGCS1 | Cholesterol Metabolism (7913309); HMG CoA Synth C SF | 3.9 | 7.11E-09 | | | | | 2.8 | 3.97E-07 |
| HS17B7 | Cholesterol Biosynthesis; NADB Rossmann SF; SDR SF | 2.7 | 9.57E-06 | | | | | 1.9 | 1.22E-03 |
| ID1 | Cholesterol Metabolism; Nudix Hydrolase SF | 3.1 | 3.39E-06 | | | | | 2.2 | 2.17E-04 |
| IFRD1 | Lipid Metabolism (16085642); IFRD SF | 1.8 | 2.25E-03 | | | | | | |
| INSIG1 | Cholesterol Metabolism (12242342); INSIG SF | 3.1 | 6.97E-07 | | | 2.9 | 1.64E-08 | | |
| LDLR | Cholesterol Metabolism; LDLa SF; EGF CA SF; LDL Receptor B SF | 2.8 | 1.77E-06 | | | 2.1 | 2.26E-04 | | |
| LIPG | Lipid Metabolism; Lipase SF; PLAT SF | 4.0 | 1.77E-03 | | | 2.3 | 4.46E-02 | | |
| LIPH | Lipid Metabolism; Lipase SF | 2.2 | 2.78E-04 | | | 1.7 | 8.88E-03 | 2.4 | 1.88E-04 |
| LPCAT2 | Biosynthesis of Phosphatidylcholine (21498505); LPLAT SF; Efh SF | | | 1.9 | 2.33E-03 | | | | |
| LRP2 | Lipoprotein Metabolism (7642623); LDLa SF; EGF CA SF | 4.3 | 1.38E-02 | | | 3.6 | 1.26E-02 | | |

Supplemental Table S10: Clustered Metabolism Genes (DEGs) - Down-regulated

| Gene | Functional Categorization | 52 DPI w worms vs Control Fold | EDGE FDR Adj p value | 52 DPI w/o worms vs Control Fold | EDGE FDR Adj p value | (52 DPI Inf w/o worms vs Worms Fold | EDGE FDR Adj p value | (21 DPI Inf vs Control) Fold | EDGE FDR Adj p value |
|--|--|--------------------------------|----------------------|----------------------------------|----------------------|-------------------------------------|----------------------|------------------------------|----------------------|
| Amino Acid Metabolism or Transport | | | | | | | | | |
| ACADSB | BCAA Metabolism (21430231); Leucine Metabolism (21430231); ACAD SF | -1.6 | 1.66E-03 | | | | | | |
| AHCYL2 | Homocysteine Metabolism; FDH GDH-like SF | -2.4 | 5.80E-06 | | | | | | |
| AOC1 | Arginine Metabolism; Tryptophan Metabolism; Cu Amine Oxid SF | | | | | -2.1 | 5.97E-05 | -1.8 | 2.15E-02 |
| ASPA | Aspartate Metabolism (9407392); Peptidase M14-like SF | -2.9 | 4.20E-03 | | | | | -2.8 | 1.01E-02 |
| IVD | Branched-chain Amino Acid Metabolism (25287287); ACAD SF | -1.6 | 2.32E-02 | | | | | | |
| PIPOX | Lysine Catabolism (10642506); NAD Binding 8 SF | -4.9 | 6.45E-03 | | | | | | |
| SLC25A34 | Isopropylmalate Transporter (18682385); Solute Carrier SF | -7.8 | 1.41E-09 | | | -4.2 | 1.12E-05 | | |
| SLC25A38 | Glycine Transporter (26821380); Solute Carrier SF | -1.9 | 4.57E-04 | | | | | | |
| SLC38A4 | Arginine/Glycine/Histidine/Lysine Transporter (11342143); Solute Carrier SF | -7.7 | 3.14E-09 | -2.6 | 5.46E-04 | -3.0 | 3.10E-03 | | |
| SLC43A2 | BCAA/Methionine/Phenylalanine Transporter (15653939); Solute Carrier SF | -1.8 | 2.00E-03 | -1.6 | 2.36E-02 | | | | |
| SLC6A6 | Taurine Transporter (8010975); SLC5-6-like SBD SF; Solute Carrier SF | -1.6 | 5.12E-02 | | | | | | |
| SLC7A3L2* | Orphan Transporter; Spore Permease SF; Solute Carrier SF | -1.8 | 4.24E-04 | | | | | | |
| SLC7A3L4* | Orphan Transporter; Spore Permease SF; Solute Carrier SF | -2.6 | 4.44E-03 | | | -2.1 | 4.13E-02 | | |
| SLC7A3L6* | Orphan Transporter; Spore Permease SF; Solute Carrier SF | -2.8 | 1.70E-02 | | | | | | |
| SLC7A3L7* | Orphan Transporter; Spore Permease SF; Solute Carrier SF | -2.4 | 3.11E-02 | | | -2.3 | 4.90E-02 | -3.6 | 4.06E-04 |
| SLC7A3L8* | Orphan Transporter; Spore Permease SF; Solute Carrier SF | -1.7 | 1.79E-02 | | | | | | |
| SLC7A8 | Alanine/Phenylalanine Transporter; Solute Carrier SF | -3.1 | 2.76E-05 | | | -2.1 | 5.64E-03 | | |
| THNSL2 | O-phospho-homoserine Catabolism (17034760); Trp-synth-beta II SF | | | -2.2 | 2.04E-04 | | | | |
| Carbohydrate Metabolism or Transport | | | | | | | | | |
| AKR1E2 | Fructose Metabolism (9504428); Aldo Ket Red SF | -1.9 | 3.20E-03 | | | -1.8 | 4.12E-03 | | |
| ALDOB | Fructose Metabolism; Glycolysis; Aldolase Class I SF | -27.7 | 2.35E-07 | | | | | -10.6 | 8.40E-19 |
| FBP2 | Fructose Metabolism (16213487); Gluconeogenesis (18780768); FIG SF | -1.6 | 1.05E-02 | | | | | | |
| PKC1 | Gluconeogenesis (20124556); PEPCk Hprk SF | -16.9 | 1.62E-07 | -3.1 | 1.86E-02 | -5.4 | 1.48E-03 | | |
| PDK2 | Gluconeogenesis (12682057); BCDHK Adom3 SF; HATPase C SF | -1.9 | 1.11E-03 | -1.6 | 1.50E-02 | | | | |
| PDK4 | Gluconeogenesis; BCDHK Adom3 SF; HATPase C SF | -7.7 | 2.11E-04 | -3.0 | 3.61E-02 | | | -4.6 | 5.99E-03 |
| PFKFB4 | Fructose Metabolism (10095107); Glycolysis; P-loop NTPase SF | -2.0 | 4.11E-05 | | | | | | |
| PGM5 | Biosynthesis of Glucose-6-phosphate (8586438); Phosphohexomutase SF | | | | | | | -2.1 | 8.60E-04 |
| SI | Isomaltose/Sucrose Metabolism (7002920); Trefol SF; GH31 SF | -7.9 | 8.57E-03 | | | -6.1 | 2.79E-02 | | |
| SLC22A4 | Ascorbic Acid/Class I Glucose Transporter Family Member (23177992); Solute Carrier SF | -1.8 | 1.06E-03 | | | | | | |
| SLC45A3 | Glucose Transporter (22521588); Solute Carrier SF | | | | | -1.6 | 2.17E-02 | | |
| Lipid Metabolism or Transport | | | | | | | | | |
| A1CF | Lipid Metabolism (29083408); RNA Recognition Motif (RRM) SF; DSRM SF | | | -1.6 | 1.73E-02 | | | | |
| ABCA1 | Cholesterol Metabolism; Lipid Metabolism; ABC ATPase SF | | | | | -1.7 | 5.31E-02 | -1.9 | 5.62E-03 |
| ABCA6 | Macrophage Cholesterol Metabolism (11478798); ABC ATPase SF | -6.5 | 3.05E-06 | | | -4.4 | 1.88E-04 | -6.4 | 3.40E-08 |
| ABCA8 | Bile Acid Transporter (12379217); ABC ATPase SF | -4.1 | 3.01E-03 | | | -2.7 | 4.77E-02 | -6.8 | 4.42E-10 |
| ABCA9 | Macrophage Cholesterol Transport (12150964); ABC ATPase SF | -2.2 | 2.05E-03 | | | -2.7 | 5.24E-02 | -5.5 | 3.06E-08 |
| ABCB4 | Bile Acid Phospholipid Transport; ABC ATPase SF | -2.7 | 2.10E-02 | | | | | | |
| ABCC6 | Cholesterol Transport (25064003); ABC ATPase SF | -2.1 | 2.65E-05 | | | | | | |
| ACAD10 | Fatty Acid Oxidation (21237653); ACAD SF | -1.6 | 1.02E-02 | | | | | | |
| ACADS | Fatty Acid Beta Oxidation; Mitochondrial Lipid Metabolism (18977676); ACAD SF | -1.7 | 2.86E-03 | | | | | | |
| ACSBG1 | Very Long-chain Fatty Acid Oxidation (10954728); Acyl-CoA Synthetase SF (17762044) | -2.8 | 4.00E-02 | | | | | | |
| ACSL6 | Lipid Metabolism; Long-chain ACS Family; AFD Class I SF; Acyl-CoA Synthetase SF (17762044) | | | | | | | -3.7 | 9.52E-03 |
| APOE | Cholesterol Metabolism; Apolipoprotein A1/A4/E SF | -1.7 | 3.18E-02 | | | | | | |
| APOL2 | Apol SF | -2.4 | 1.75E-04 | | | -1.7 | 3.42E-02 | | |
| BDH1 | Fatty Acid Catabolism (8679568); NADB Rossmann SF | | | -1.7 | 5.79E-03 | -1.7 | 7.89E-03 | | |
| CES1B* | Cholesterol Metabolism; Lipid Metabolism; Carboxylesterase Family | -2.1 | 5.66E-04 | -1.7 | 7.07E-03 | | | | |
| CYP4V2 | Fatty Acid Metabolism (19661213); Cytochrome P450 SF | | | | | | | -2.0 | 1.52E-02 |
| CYP7B1 | Bile Acid Synthesis (2492729); Cytochrome p450 SF | | | | | -2.0 | 1.59E-02 | -1.7 | 4.83E-02 |
| FAAH | Lipid Metabolism; Amidase SF | -2.7 | 6.61E-04 | | | | | | |
| FABP1 | Lipid Metabolism (17449472); Lipocalin SF | -3.7 | 5.00E-05 | | | -2.4 | 1.03E-02 | | |
| FABP3L2* | Lipocalin SF | | | | | | | -44.6 | 1.84E-04 |
| FABP4 | Lipid Metabolism (11891416); Lipocalin SF | -2.7 | 1.86E-02 | | | | | | |
| GHHPBP1 | Lipoprotein Metabolism (17997385); LU SF | -5.3 | 6.94E-04 | -2.5 | 3.06E-02 | | | | |
| HADHA | Long Chain Fatty Acid Beta Oxidation (8135828); Crotonase-like SF; AdoMet MTases SF | -1.7 | 1.84E-04 | -1.5 | 1.16E-03 | | | | |
| LIPA | Lipid Metabolism (16131527); Abhydro Lipase SF | -1.5 | 3.68E-02 | | | | | | |
| LIPE | Lipid Metabolism; HSL N SF | -1.7 | 3.48E-02 | | | | | | |
| LIPM | Abhydro Lipase SF | | | | | | | -19.0 | 2.62E-02 |
| MOGAT2 | Triglyceride Biosynthesis (25164810); LPLAT SF | -9.2 | 1.14E-03 | | | -4.9 | 2.97E-02 | -5.4 | 8.78E-03 |
| OSBPL10 | Cholesterol Metabolism (19554302); H-like SF; Oxysterol BP SF | -1.9 | 6.89E-03 | | | | | | |
| PLIN1 | Inhibition of Lipolysis (17353653); Penlipin SF | -4.0 | 3.06E-02 | | | | | -4.3 | 4.50E-05 |
| PLTP | Lipoprotein Metabolism; B1 SF | -1.7 | 1.75E-02 | | | | | | |
| PNPLA2 | Lipid Metabolism (18445677); Patatin and cPLA2 SF | -2.4 | 1.05E-02 | | | | | | |
| PNPLA6 | Phosphatidylcholine Catabolism (15044461); CAP ED SF; Patatin and cPLA2 SF | -1.6 | 2.08E-02 | -1.6 | 1.01E-02 | -1.5 | 3.42E-02 | | |
| PNPLA7 | Lysophospholipase (18086666); CAP ED SF; Patatin and cPLA2 SF | -1.6 | 4.92E-03 | | | -1.6 | 6.03E-03 | | |
| PON1 | Lipid Metabolism (19550323); Str Synth SF | | | -4.5 | 4.13E-02 | | | | |
| PPAP2B | Sphingosine-1-phosphate (S1P) Metabolism (12471011); PAP2-like SF | | | | | | | -1.8 | 1.44E-02 |
| SCARB2 | Cholesterol Metabolism (14570588); SRCR SF | -1.6 | 1.71E-03 | | | -1.6 | 5.21E-04 | | |
| SCARF1 | Lipid Metabolism (15145948); EGF Lam SF | -1.5 | 4.78E-02 | | | | | | |
| SLC10A2 | Bile Acid Transporter; Lipid Metabolism; Solute Carrier SF | -1285.8 | 8.30E-08 | -4.3 | 4.13E-02 | -297.1 | 1.18E-04 | | |
| SLC16A1 | Short-chain Fatty Acid Transporter; Solute Carrier SF | -5.7 | 0.00E+00 | | | -4.4 | 0.00E+00 | -2.2 | 1.59E-03 |
| SLC25A20 | Carbonyl Transporter; Fatty Acid Metabolism; Solute Carrier SF | -2.1 | 1.13E-04 | | | | | | |
| SLC25A29 | Mitochondrial Carnitine Transporter (12882971, 19287344); Solute Carrier SF | -1.9 | 1.01E-02 | | | | | | |
| SLC25A42 | Coenzyme A Transporter (19429682); Solute Carrier SF | | | | | -2.1 | 7.36E-03 | | |
| SLC27A1 | Fatty Acid Transporter; Lipid Metabolism; Solute Carrier SF | -1.7 | 3.17E-02 | | | | | | |
| TM6SF2 | Lipid Metabolism (24927523); DUF2781 SF | -6.3 | 2.26E-14 | | | -4.0 | 1.95E-09 | | |
| Mineral Metabolism or Transport | | | | | | | | | |
| ABCG2 | Heme Transport (16487711); ABC ATPase SF | -7.6 | 6.40E-07 | | | -3.4 | 2.49E-03 | -3.5 | 9.73E-07 |
| CLCA4 | Chloride Ion Transport; CLCA N SF; vWFA SF | -27.9 | 1.34E-07 | | | | | | |
| FTL | Iron Storage; Ferritin-like SF | -1.6 | 4.64E-02 | | | | | | |
| PHEX | Phosphate Metabolism (22339660); Glu/Zincin SF | | | | | | | -6.8 | 1.81E-02 |
| SCARA5 | Ferritin Receptor (19154717); Iron Metabolism (19154717); SRCR SF | -2.4 | 2.08E-02 | | | | | | |
| SELENBP1 | Selenium Containing Protein; BP56 SF | -4.4 | 1.11E-11 | | | -3.0 | 1.73E-07 | | |
| SELENOP | Selenoprotein (12423375); Selenoprotein P SF | -3.3 | 2.97E-08 | | | -2.3 | 5.83E-05 | | |
| SLC25A3 | Mitochondrial Phosphate Transporter (23266187); Solute Carrier SF | | | | | | | -1.9 | 2.19E-02 |
| SLC26A3 | Chloride Ion Transport (16715296); Solute Carrier SF | -12.7 | 8.30E-08 | | | -12.0 | 9.62E-08 | -2.5 | 8.05E-03 |
| SLC30A10 | Mg Transporter (22341972); Zn Transporter (22706290); Solute Carrier SF | -10.2 | 3.00E-03 | | | -6.3 | 2.38E-02 | -9.4 | 2.71E-13 |
| SLC30A3 | Zn Transporter; Solute Carrier SF | -3.1 | 8.38E-03 | | | | | | |
| SLC31A2 | Copper Transporter (9207117); Solute Carrier SF | -1.8 | 2.06E-02 | | | | | | |
| SLC39A5 | Zn Transporter (15322118); Solute Carrier SF | -2.3 | 3.63E-02 | | | | | | |
| SLC8A1 | Intestinal Calcium Transport (26109800); Solute Carrier SF | | | | | -1.6 | 5.29E-02 | -2.1 | 2.28E-03 |
| Vitamin Metabolism or Transport | | | | | | | | | |
| ALDH1A3 | Retinoic Acid Synthesis; Vitamin A Metabolism; ALDH-SF SF | | | | | -2.0 | 1.10E-02 | | |
| CYP26B1 | Retinoic Acid Catabolism; Vitamin A Metabolism; Cytochrome P450 SF | -5.0 | 2.61E-08 | | | -4.6 | 4.16E-08 | -4.8 | 9.76E-03 |
| CYP27A1 | Vitamin D Metabolism (15353333); Cytochrome P450 SF | -1.8 | 3.99E-02 | | | | | | |
| MTHFR | Folic Acid Metabolism; MTHFR SF | -1.8 | 7.98E-03 | | | | | | |
| NADK | NADPH Metabolism (17855339); nadF SF | | | | | -1.6 | 4.96E-03 | | |
| RBP5 | Vitamin A Metabolism (11274389); Lipocalin SF | -2.4 | 5.79E-03 | | | | | | |
| RDH10 | Retinol Dehydrogenase; Vitamin A Metabolism; NADB Rossmann SF; SDR SF | | | | | | | -2.0 | 2.25E-02 |
| RDH16 | Retinol Dehydrogenase; Vitamin A Metabolism; NADB Rossmann SF; SDR SF | -6.1 | 3.20E-03 | -2.8 | 4.89E-02 | | | | |
| RETSAT | Vitamin A Metabolism (15358783); NADB Rossmann SF; COG1233 SF | -2.2 | 4.10E-06 | | | -1.6 | 7.89E-03 | | |
| SDR9C7 | Putative Retinol Dehydrogenase (19703561); NADB Rossmann SF; SDR SF | -9.3 | 8.99E-03 | -4.2 | 2.26E-02 | | | | |
| SLC26A32 | Folate Transporter (10978331); Solute Carrier SF | | | | | | | | |
| TCN2 | Vitamin B12 Transporter; Cobalamin Bind SF; DUF4430 SF | -1.5 | 3.88E-02 | | | | | | |
| VDR | Vitamin D3 Signaling; Transcription Factor; NR-DBD SF | -1.7 | 7.90E-03 | | | | | | |
| Miscellaneous Metabolism or Transport | | | | | | | | | |
| ABCB1 | ATP-dependent Xenobiotic Efflux; ABC Membrane SF; P-loop NTPase SF | | | | | -2.0 | 7.10E-03 | | |
| ABCB6 | Coproporphyrinogen III Transporter (23792964); ABC Membrane SF | | | | | -1.6 | 5.08E-03 | | |
| ABCC4L2* | Orphan Transporter; ABC Membrane SF; P-loop NTPase SF | | | | | | | -3.4 | 2.05E-10 |

Supplemental Table S12. Metabolic markers of *Trichuris suis* infection colonized 33 cp31

| Seq. ID | Super Pathway | Sub Pathway | Biochemical Name | Platform | KEGG | HMDB | Fold of Change | | Statistical Values | | Mean Values | | % Filled Values | | Super Pathway | Sub Pathway | PubMed | CAS | Ref | Date |
|---------|--|---------------|------------------|----------|---------------|---------|----------------|--------------|--------------------|---------|--------------|----------|-----------------|--|--|----------------|-----------|-------|-------|------|
| | | | | | | | Infected | Non-Infected | p-Value | t-Value | Non-Infected | Infected | Non-Infected | Infected | | | | | | |
| | | | | | | | Infected | Non-Infected | | | | | | | | | | | | |
| 1 | Glycine, serine and threonine metabolism | Alanine | Alanine | GCMS | 11777 | Alanine | 1.00 | 0.0000 | 0.0000 | 0.0000 | 2.0491 | 100 | 100 | Alanine acid | Glycine, serine and threonine metabolism | 520712720 | 56-60-6 | 1865 | 10/13 | |
| 2 | | Alanine | GCMS | 11778 | Alanine | 1.00 | 0.0000 | 0.0000 | 0.0000 | 2.0491 | 100 | 100 | Alanine acid | Glycine, serine and threonine metabolism | 520712720 | 56-60-6 | 1865 | 10/13 | | |
| 3 | | Alanine | GCMS | 27710 | Alanine | 1.00 | 0.0000 | 0.0000 | 0.0000 | 2.0491 | 100 | 100 | Alanine acid | Glycine, serine and threonine metabolism | 18072 | 543-24-4 | 735 | 11/61 | | |
| 4 | | Alanine | GCMS | 1549 | Alanine | 1.00 | 0.0000 | 0.0000 | 0.0000 | 2.0491 | 100 | 100 | Alanine acid | Glycine, serine and threonine metabolism | 591105785 | 56-61-1 | 1281 | 2/04 | | |
| 13 | | Alanine | GCMS | 1548 | Alanine | 1.00 | 0.0000 | 0.0000 | 0.0000 | 2.0491 | 100 | 100 | Alanine acid | Glycine, serine and threonine metabolism | 591105785 | 56-61-1 | 1281 | 2/04 | | |
| 17 | | Alanine | GCMS | 07717 | Alanine | 1.00 | 0.0000 | 0.0000 | 0.0000 | 2.0491 | 100 | 100 | Alanine acid | Glycine, serine and threonine metabolism | 687101628 | 71-19-5 | 173 | 10/11 | | |
| 18 | | Alanine | GCMS | 20339 | Alanine | 1.00 | 0.0000 | 0.0000 | 0.0000 | 2.0491 | 100 | 100 | Alanine acid | Glycine, serine and threonine metabolism | 4601717 | 1703-74-2 | 246 | 10/11 | | |
| 24 | | Alanine | GCMS | 0286 | Alanine | 1.00 | 0.0000 | 0.0000 | 0.0000 | 2.0491 | 100 | 100 | Alanine acid | Glycine, serine and threonine metabolism | 591105785 | 56-61-1 | 1281 | 2/04 | | |
| 28 | | Alanine | GCMS | 25 | Alanine | 1.00 | 0.0000 | 0.0000 | 0.0000 | 2.0491 | 100 | 100 | Alanine acid | Glycine, serine and threonine metabolism | 22814907 | 56-417-027-9-6 | 1451 | 1/14 | | |
| 32 | | Alanine | GCMS | 1136 | Alanine | 1.00 | 0.0000 | 0.0000 | 0.0000 | 2.0491 | 100 | 100 | Alanine acid | Glycine, serine and threonine metabolism | 590121124 | 56-41-7 | 1147 | 11/13 | | |
| 35 | Alanine and aspartate metabolism | Aspartate | GCMS | 2285 | Aspartate | 1.01 | 0.0000 | 0.0000 | 0.0000 | 1.0000 | 1.0000 | 100 | 100 | Aspartic acid | Alanine and aspartate metabolism | 590121124 | 56-41-7 | 1147 | 11/13 | |
| 36 | | Aspartate | GCMS | 1835 | Aspartate | 1.00 | 0.0000 | 0.0000 | 0.0000 | 1.0000 | 1.0000 | 100 | 100 | Aspartic acid | Alanine and aspartate metabolism | 1087 | 499-83-2 | 1261 | 2/04 | |
| 38 | | Aspartate | GCMS | 1835 | Aspartate | 1.00 | 0.0000 | 0.0000 | 0.0000 | 1.0000 | 1.0000 | 100 | 100 | Aspartic acid | Alanine and aspartate metabolism | 1087 | 499-83-2 | 1261 | 2/04 | |
| 39 | | Aspartate | GCMS | 27 | Aspartate | 1.00 | 0.0000 | 0.0000 | 0.0000 | 1.0000 | 1.0000 | 100 | 100 | Aspartic acid | Alanine and aspartate metabolism | 611 | 56-40-0 | 700 | 1/61 | |
| 40 | | Aspartate | GCMS | 25 | Aspartate | 1.00 | 0.0000 | 0.0000 | 0.0000 | 1.0000 | 1.0000 | 100 | 100 | Aspartic acid | Alanine and aspartate metabolism | 590121124 | 56-41-7 | 1147 | 11/13 | |
| 47 | | Aspartate | GCMS | 1416 | Aspartate | 1.00 | 0.0000 | 0.0000 | 0.0000 | 1.0000 | 1.0000 | 100 | 100 | Aspartic acid | Alanine and aspartate metabolism | 688208110 | 56-12-2 | 1037 | 3/04 | |
| 48 | | Aspartate | GCMS | 4007 | Aspartate | 1.00 | 0.0000 | 0.0000 | 0.0000 | 1.0000 | 1.0000 | 100 | 100 | Aspartic acid | Alanine and aspartate metabolism | 2072 | 4386-02-0 | 810 | 11/12 | |
| 50 | | Aspartate | GCMS | 19700 | Aspartate | 1.00 | 0.0000 | 0.0000 | 0.0000 | 1.0000 | 1.0000 | 100 | 100 | Aspartic acid | Alanine and aspartate metabolism | 150909 | 3817-68-0 | 1492 | 10/11 | |
| 53 | | Aspartate | GCMS | 37424 | Aspartate | 1.00 | 0.0000 | 0.0000 | 0.0000 | 1.0000 | 1.0000 | 100 | 100 | Aspartic acid | Alanine and aspartate metabolism | 773305145 | 5041-29-2 | 1807 | 2/04 | |
| 54 | | Aspartate | GCMS | 2094 | Aspartate | 1.00 | 0.0000 | 0.0000 | 0.0000 | 1.0000 | 1.0000 | 100 | 100 | Aspartic acid | Alanine and aspartate metabolism | 774 | 3914-52-3 | 193 | 10/12 | |
| 55 | Glutamate metabolism | Glutamate | GCMS | 907 | Glutamate | 1.00 | 0.0000 | 0.0000 | 0.0000 | 1.0000 | 1.0000 | 100 | 100 | Glutamic acid | Glutamate metabolism | 72875 | 104-83-8 | 1118 | 10/11 | |
| 56 | | Glutamate | GCMS | 1074 | Glutamate | 1.00 | 0.0000 | 0.0000 | 0.0000 | 1.0000 | 1.0000 | 100 | 100 | Glutamic acid | Glutamate metabolism | 774 | 3914-52-3 | 193 | 10/12 | |
| 64 | | Glutamate | GCMS | 2030 | Glutamate | 1.00 | 0.0000 | 0.0000 | 0.0000 | 1.0000 | 1.0000 | 100 | 100 | Glutamic acid | Glutamate metabolism | 611 | 56-40-0 | 700 | 1/61 | |
| 65 | | Glutamate | GCMS | 19700 | Glutamate | 1.00 | 0.0000 | 0.0000 | 0.0000 | 1.0000 | 1.0000 | 100 | 100 | Glutamic acid | Glutamate metabolism | 150909 | 3817-68-0 | 1492 | 10/11 | |
| 68 | | Glutamate | GCMS | 1938 | Glutamate | 1.00 | 0.0000 | 0.0000 | 0.0000 | 1.0000 | 1.0000 | 100 | 100 | Glutamic acid | Glutamate metabolism | 774 | 3914-52-3 | 193 | 10/12 | |
| 69 | | Glutamate | GCMS | 1074 | Glutamate | 1.00 | 0.0000 | 0.0000 | 0.0000 | 1.0000 | 1.0000 | 100 | 100 | Glutamic acid | Glutamate metabolism | 774 | 3914-52-3 | 193 | 10/12 | |
| 74 | | Glutamate | GCMS | 1938 | Glutamate | 1.00 | 0.0000 | 0.0000 | 0.0000 | 1.0000 | 1.0000 | 100 | 100 | Glutamic acid | Glutamate metabolism | 774 | 3914-52-3 | 193 | 10/12 | |
| 75 | | Glutamate | GCMS | 1938 | Glutamate | 1.00 | 0.0000 | 0.0000 | 0.0000 | 1.0000 | 1.0000 | 100 | 100 | Glutamic acid | Glutamate metabolism | 774 | 3914-52-3 | 193 | 10/12 | |
| 76 | | Glutamate | GCMS | 1938 | Glutamate | 1.00 | 0.0000 | 0.0000 | 0.0000 | 1.0000 | 1.0000 | 100 | 100 | Glutamic acid | Glutamate metabolism | 774 | 3914-52-3 | 193 | 10/12 | |
| 77 | | Glutamate | GCMS | 1938 | Glutamate | 1.00 | 0.0000 | 0.0000 | 0.0000 | 1.0000 | 1.0000 | 100 | 100 | Glutamic acid | Glutamate metabolism | 774 | 3914-52-3 | 193 | 10/12 | |
| 78 | Lysine metabolism | Lysine | GCMS | 1301 | Lysine | 1.00 | 0.0000 | 0.0000 | 0.0000 | 1.0000 | 1.0000 | 100 | 100 | Lysine | Lysine metabolism | 1087 | 499-83-2 | 1261 | 2/04 | |
| 81 | | Lysine | GCMS | 1301 | Lysine | 1.00 | 0.0000 | 0.0000 | 0.0000 | 1.0000 | 1.0000 | 100 | 100 | Lysine | Lysine metabolism | 1087 | 499-83-2 | 1261 | 2/04 | |
| 82 | | Lysine | GCMS | 1301 | Lysine | 1.00 | 0.0000 | 0.0000 | 0.0000 | 1.0000 | 1.0000 | 100 | 100 | Lysine | Lysine metabolism | 1087 | 499-83-2 | 1261 | 2/04 | |
| 83 | | Lysine | GCMS | 1301 | Lysine | 1.00 | 0.0000 | 0.0000 | 0.0000 | 1.0000 | 1.0000 | 100 | 100 | Lysine | Lysine metabolism | 1087 | 499-83-2 | 1261 | 2/04 | |
| 84 | | Lysine | GCMS | 1301 | Lysine | 1.00 | 0.0000 | 0.0000 | 0.0000 | 1.0000 | 1.0000 | 100 | 100 | Lysine | Lysine metabolism | 1087 | 499-83-2 | 1261 | 2/04 | |
| 85 | | Lysine | GCMS | 1301 | Lysine | 1.00 | 0.0000 | 0.0000 | 0.0000 | 1.0000 | 1.0000 | 100 | 100 | Lysine | Lysine metabolism | 1087 | 499-83-2 | 1261 | 2/04 | |
| 86 | | Lysine | GCMS | 1301 | Lysine | 1.00 | 0.0000 | 0.0000 | 0.0000 | 1.0000 | 1.0000 | 100 | 100 | Lysine | Lysine metabolism | 1087 | 499-83-2 | 1261 | 2/04 | |
| 87 | | Lysine | GCMS | 1301 | Lysine | 1.00 | 0.0000 | 0.0000 | 0.0000 | 1.0000 | 1.0000 | 100 | 100 | Lysine | Lysine metabolism | 1087 | 499-83-2 | 1261 | 2/04 | |
| 88 | | Lysine | GCMS | 1301 | Lysine | 1.00 | 0.0000 | 0.0000 | 0.0000 | 1.0000 | 1.0000 | 100 | 100 | Lysine | Lysine metabolism | 1087 | 499-83-2 | 1261 | 2/04 | |
| 89 | | Lysine | GCMS | 1301 | Lysine | 1.00 | 0.0000 | 0.0000 | 0.0000 | 1.0000 | 1.0000 | 100 | 100 | Lysine | Lysine metabolism | 1087 | 499-83-2 | 1261 | 2/04 | |
| 90 | Phenylalanine & tyrosine metabolism | Phenylalanine | GCMS | 3140 | Phenylalanine | 1.00 | 0.0000 | 0.0000 | 0.0000 | 1.0000 | 1.0000 | 100 | 100 | Phenylalanine | Phenylalanine & tyrosine metabolism | 520656140 | 100-95-1 | 1279 | 10/11 | |
| 91 | | Phenylalanine | GCMS | 3140 | Phenylalanine | 1.00 | 0.0000 | 0.0000 | 0.0000 | 1.0000 | 1.0000 | 100 | 100 | Phenylalanine | Phenylalanine & tyrosine metabolism | 520656140 | 100-95-1 | 1279 | 10/11 | |
| 92 | | Phenylalanine | GCMS | 3140 | Phenylalanine | 1.00 | 0.0000 | 0.0000 | 0.0000 | 1.0000 | 1.0000 | 100 | 100 | Phenylalanine | Phenylalanine & tyrosine metabolism | 520656140 | 100-95-1 | 1279 | 10/11 | |
| 93 | | Phenylalanine | GCMS | 3140 | Phenylalanine | 1.00 | 0.0000 | 0.0000 | 0.0000 | 1.0000 | 1.0000 | 100 | 100 | Phenylalanine | Phenylalanine & tyrosine metabolism | 520656140 | 100-95-1 | 1279 | 10/11 | |
| 94 | | Phenylalanine | GCMS | 3140 | Phenylalanine | 1.00 | 0.0000 | 0.0000 | 0.0000 | 1.0000 | 1.0000 | 100 | 100 | Phenylalanine | Phenylalanine & tyrosine metabolism | 520656140 | 100-95-1 | 1279 | 10/11 | |
| 95 | | Phenylalanine | GCMS | 3140 | Phenylalanine | 1.00 | 0.0000 | 0.0000 | 0.0000 | 1.0000 | 1.0000 | 100 | 100 | Phenylalanine | Phenylalanine & tyrosine metabolism | 520656140 | 100-95-1 | 1279 | 10/11 | |
| 96 | | Phenylalanine | GCMS | 3140 | Phenylalanine | 1.00 | 0.0000 | 0.0000 | 0.0000 | 1.0000 | 1.0000 | 100 | 100 | Phenylalanine | Phenylalanine & tyrosine metabolism | 520656140 | 100-95-1 | 1279 | 10/11 | |
| 97 | | Phenylalanine | GCMS | 3140 | Phenylalanine | 1.00 | 0.0000 | 0.0000 | 0.0000 | 1.0000 | 1.0000 | 100 | 100 | Phenylalanine | Phenylalanine & tyrosine metabolism | 520656140 | 100-95-1 | 1279 | 10/11 | |
| 98 | | Phenylalanine | GCMS | 3140 | Phenylalanine | 1.00 | 0.0000 | 0.0000 | 0.0000 | 1.0000 | 1.0000 | 100 | 100 | Phenylalanine | Phenylalanine & tyrosine metabolism | 520656140 | 100-95-1 | 1279 | 10/11 | |
| 99 | | Phenylalanine | GCMS | 3140 | Phenylalanine | 1.00 | 0.0000 | 0.0000 | 0.0000 | 1.0000 | 1.0000 | 100 | 100 | Phenylalanine | Phenylalanine & tyrosine metabolism | 520656140 | 100-95-1 | 1279 | 10/11 | |
| 100 | Amino acid | Tyrosine | GCMS | 3203 | Tyrosine | 1.00 | 0.0000 | 0.0000 | 0.0000 | 1.0000 | 1.0000 | 100 | 100 | Tyrosine | Tyrosine metabolism | 687101628 | 105-17-3 | 1158 | 10/11 | |
| 101 | | Tyrosine | GCMS | 3203 | Tyrosine | 1.00 | 0.0000 | 0.0000 | 0.0000 | 1.0000 | 1.0000 | 100 | 100 | Tyrosine | Tyrosine metabolism | 687101628 | 105-17-3 | 1158 | 10/11 | |
| 102 | | Tyrosine | GCMS | 3203 | Tyrosine | 1.00 | 0.0000 | 0.0000 | 0.0000 | 1.0000 | 1.0000 | 100 | 100 | Tyrosine | Tyrosine metabolism | 687101628 | 105-17-3 | 1158 | 10/11 | |
| 103 | | Tyrosine | GCMS | 3203 | Tyrosine | 1.00 | 0.0000 | 0.0000 | 0.0000 | 1.0000 | 1.0000 | 100 | 100 | Tyrosine | Tyrosine metabolism | 687101628 | 105-17-3 | 1158 | 10/11 | |
| 104 | | Tyrosine | GCMS | 3203 | Tyrosine | 1.00 | 0.0000 | 0.0000 | 0.0000 | 1.0000 | 1.0000 | 100 | 100 | Tyrosine | Tyrosine metabolism | 687101628 | 105-17-3 | 1158 | 10/11 | |
| 105 | | Tyrosine | GCMS | 3203 | Tyrosine | 1.00 | 0.0000 | 0.0000 | 0.0000 | 1.0000 | 1.0000 | 100 | 100 | Tyrosine | Tyrosine metabolism | 687101628 | 105-17-3 | 1158 | 10/11 | |
| 106 | | Tyrosine | GCMS | 3203 | Tyrosine | 1.00 | 0.0000 | 0.0000 | 0.0000 | 1.0000 | 1.0000 | 100 | 100 | Tyrosine | Tyrosine metabolism | 687101628 | 105-17-3 | 1158 | 10/11 | |
| 107 | | Tyrosine | GCMS | 3203 | Tyrosine | 1.00 | 0 | | | | | | | | | | | | | |

