Table S1 Primer information

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| --- | --- |
| Gene | Primer（5'-3'） |
| TCHH | F:TTGGGCCGATTACCTGTGAG |
| R:ACCTCTTTCCTGCATTGCCT |
| LPL | F:GCGATTCCTACTTCAGCTGGT |
| R:TCCCGGGAACAGAAGATAACC |
| EEA1 | F:TGACCTTGGAACGTGAGAGAG |
| R:GTTCACTCCTCAGCTGGCTT |
| LOC443015 | F:TACGGAGACCTGAACCACCT |
| R:ATGAAGAAGTGGAGGCGTGG |
| LOC101118514 | F:AGATGCTGAGTGGTGTTGGG |
| R:CGCACAAGCCCCTTCTGG |
| HSPA6 | F:TAAATGGCCCCTCTGAACGG |
| R:CCACCCCTGAAGTTAGGCAG |
| LOC101107641 | F:GGATCTGAACACGCGGAGAA |
| R:CGCTCTGGTTGTAGTAGCCG |
| CD14 | F:CCCTCAGTCTCCGTAACGTG |
| R:GTGTGCTTGGGCAATGTTCA |



**Fig. S1** BP enrichment bubble chart



**Fig S2**

Fig S3 **a** KEGG pathway in positive model. **b** KEGG pathway in b negative model

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**Fig. S4** Correlation analysis between rumen microbes and host genes



Fig S5 Ko00140 pathway

Fig S6 ko00830 pathway