**Supplementary Materials**

**Table S1**. Primer sequences for Real-time PCR

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| Genes | Accession No. | Primes（5'-3'） |
| IL-1β | NM\_001009465.2 | F: GAAGAGCTGCACCCAACACCTG |
| R: CGACACTGCCTGCCTGAAGC |
| IL-6 | NM\_001009392.1 | F: GCTGCTCCTGGTGATGACTTCTG |
| R: AGTAGTCTGCTTGGGGTGGTGTC |
| NFKB | XM\_027960471.1 | F: GCCTGCTGAATGCCCTGTCTG |
| R: CTCTGTTTCCTGTTCCACCGACTG |
| NOD-2 | XM\_015100434.2 | F: TGCCATCCTCGCTCAGACATCTC |
| R: CAGCCACACTGCCCTCTTTGC |
| TLR-2 | NM\_001048231.1 | F: TGCCCGCCTCTCCCTTTCTGR: CGTGAGCAGGAGCAACAGGAAG |
| TLR-3 | NM\_001135928.1 | F: ACACAATCAGCCACACGACCTTCR: GCCAGGCAAAGGAGTCATTACCC |
| TLR-4 | NM\_001135930.1 | F: TGGGTGCGGAATGAACTGGTAAAR: CTGGATGATATTGGCGGCGATGG |
| TNF-α | NM\_001024860.1 | F: CTGGCGGAGGAGGTGCTCTCR: GGAGGAAGGAGAAGAGGCTGAGG |
| GAPDH | NM\_001190390.1 | F: CGGCACAGTCAAGGCAGAGAACR: CACGTACTCAGCACCAGCATCAC |

 *IL-1β* interleukin-1β, *IL-6* interleukin-1β, *NFKB* nuclear factor-k-gene binding, *NOD2* nucleotide-binding oligomerization domain, *TLR2* Toll-like receptors2, *TLR3* Toll-like receptors3, *TLR4* Toll-like receptors4, *TNF-α* tumor necrosis factor alpha, *GAPDH* glyceraldehyde-3-phosphate dehydrogenase..



**Figure S1**. Total Ion Chromatography of Quality control samples in positive (A) and negative (B) modes.



**Figure S2**. . PLS-DA loading plots based on the liver metabolic profilings in positive mode. A: LE Group VS ME group. B: MLE Group VS ME group. C: MHE Group VS ME group. D: HE Group VS ME group.



**Figure S3**. PLS-DA loading plots based on the liver metabolic profilings in negative mode. A: LE Group VS ME group. B: MLE Group VS ME group. C: MHE Group VS ME group. D: HE Group VS ME group.