

Supplementary information

Andrographolide exerts antihyperglycemic effect through strengthening intestinal barrier function and increasing microbial composition of *Akkermansia muciniphila*

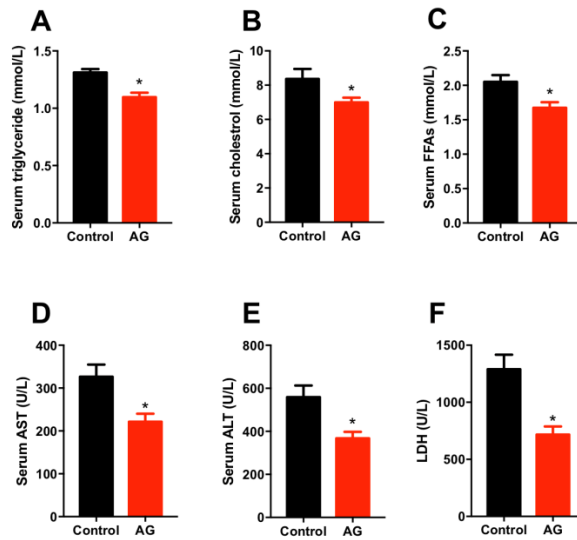
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Supplementary Table 1. Primers used for quantitative RT-PCR.

| Primer | Forward | Reverse |
|------------------------------------|-----------------------------|---------------------------|
| <i>ZO-1 (H)</i> | CTCCTGGATTTGGATTTGGA | CTGTCCTTCAGCTGGTCCTC |
| <i>Ocln (H)</i> | ATGGCTGCCTTTTGTTCAT | ATGCCCAGGATAGCACTCAC |
| <i>ZO-1 (M)</i> | AGGACACCAAAGCATGTGAG | GGCATTCTGCTGGTTACA |
| <i>Tlr2 (M)</i> | GCCTTTCAGGGAATTAAGCTCC | GATCAACCGATGGACGTGTAAA |
| <i>Cnr1 (M)</i> | CTGATGTTCTGGATCGGAGTC | TCTGAGGTGTGAATGATGATGC |
| <i>Glut2 (M)</i> | ACTTGAAGGATCAAAGCAATGT | CAGTCCTGAAATTAGCCCACAA |
| <i>Nrf2 (M)</i> | TAGATGACCATGAGTCGCTTGC | GCCAAACTTGCTCCATGTCC |
| <i>Cat (M)</i> | CCAGCGACCAGATGAAGCAG | CCACTCTCTCAGGAATCCGC |
| <i>Sod1 (M)</i> | CAGCATGGGTTCCACGTCCA | CACATTGGCCACACCGTCCT |
| <i>TNF-α (M)</i> | AGGCACTCCCCAAAAGAT | CAGTAGACAGAAGAGCGTGGTG |
| <i>IL-6 (M)</i> | CTCCATCCAGTTGCCTTCTTG | AATTAAGCCTCCGACTTGTGAAG |
| <i>Ocln (M)</i> | ATGTCCGGCCGATGCTCTC | TTTGGCTGCTCTTGGGTCTGTAT |
| <i>Lyz1 (M)</i> | GCCAAGGTCTACAATCGTTGTGAGTTG | CAGTCAGCCAGCTTGACACCACG |
| <i>Pla2g2 (M)</i> | AGGATTCCCCAAGGATGCCAC | CAGCCGTTTCTGACAGGAGTTCTGG |
| <i>DefA (M)</i> | GGTGATCATCAGACCCAGCATCA | AAGAGACTAAAAGTGGAGCAGC |
| <i>Muc2 (M)</i> | GCTCGGAACTCCAGAAAGAAG | GCCAGGGAATCGGTAGACAT |
| <i>GAPDH (M)</i> | AGGTCGGTGTGAACGGATTTG | TGTAGACCATGTAGTTGAGGTCA |
| <i>GAPDH (H)</i> | CTGGGCTACACTGAGCACC | AAGTGGTCGTTGAGGGCAATG |

Supplementary Fig. S1



Supplementary Figure S1. Andrographolide improved serum biochemical profiles. (A) serum triglyceride, (B) cholesterol, (C) FFAs, (D) AST, (E) ALT and (F) LDH levels were determined. Control, db/db mice administered with vehicle; AG, db/db mice administered with 150 mg/kg andrographolide. Data represent means \pm s.e.m. (n=12), * $p < 0.05$ versus control group.

Supplementary Fig. S2



Supplementary Figure S2. Heatmap of gut bacterial profiles. OUT annotation of gut microbiota with significant difference between control (C) and andrographolide (A) groups. Control, db/db mice administered with vehicle; AG, db/db mice administered with 150 mg/kg andrographolide, n=6, * $p < 0.05$ versus control group.