**Preventive effects of citrulline on Western diet-induced nonalcoholic fatty liver disease in rats.**

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**Supporting information:**

**Supplementary Figure**

**Supplementary Tables**



**Figure S1: Effect of amino acids on microbiota.**

Quantification of all bacteria population, *Bacteroides/Prevotella* group, *C. leptum* group, Cluster XI, *Coccoides* group, *enterococcus*, *Lactobacillus/Leuconostoc* group and *Akkermansia muciniphila* in the caecal in all groups. Each dot represents a rat, horizontal lines represent median, \*: p<0.05 vs C.

**Table S1: Composition of experimental diets**

|  |  |  |
| --- | --- | --- |
| **Calorie composition****(% Kcal)** | **Control diet****(UAR AO4, SAFE)** | **Western diet****(824053, SDS)** |
| **Lipids**  | 3 | 45 |
| **Proteins**  | 16 | 20 |
| **Carbohydrates**  | 60 | 35 |
| **Energy content (kcal/100 g)** | 331 | 454 |

**Table S2: Sequence of the primers used in this study.**

|  |  |
| --- | --- |
|  | Sequences |
| *Chop* | F 5’-ATCCTAGGCATCCGCGACCT-3’R 5’-GACCACTCTGTTTCCGTTTC-3’ |
| *Chrebp*  | F 5′-CCTTCACTACTCTTGACCCTG-3′R 5′-AACATGTCCCGCATCTGGTC-3′ |
| *Il6*  | F 5′-CAACTCCATCTGCCCTTCA-3′R 5′-TTGTGGGTGGTATCCTCTGT-3′ |
| *Mtp*  | F 5′-AGTGTCTGTAAAGGCTGTCC -3′R 5′-CTTCTTTCTTCTCTGCCTTCAG-3′ |
| *Tlr4*  | F 5′-ATTCCTGGTGTAGCCATTGCT-3′R 5′-ACCACCACAATAACTTTCCGG-3′ |
| *Tnf* | F 5′-GCCAATGGCATGGATCTCAAAG-3′R 5′-CAGAGCAATGACTCCAAAGT-3′ |
| *βactin*  | F 5’-GACGAGGCCCAGAGCAAGAGA-3’R 5’-GGGTGTTGAAGGTCTCAAACA-3’ |

F: forward; R: reverse

**Table S3: Groups and species-specific 16S rRNA gene-targeted primers and probes used in this study.**

|  |  |  |  |
| --- | --- | --- | --- |
| **Kit** | **Target organism** | **Primers and probes** | **Sequence 5'- 3'** |
| TaqMan® | All Bacteria | F\_Prok1369 | CCG-TGA-ATA-CGT-TCC-CGG |
| R\_Prok1492 | AC-GGC-TAC-CTT-GTT-ACG-ACT-T |
| P\_TH1389F | 6FAM-CTT-GTA-CAC-ACC-GCC-CGT-C-MGB |
| *Bacteroides*-*Prevotella* | Bacter\_11 | CCT-WCG-ATG-GAT-AGG-GGT-T |
| Bacter\_08 | CAC-GCT-ACT-TGG-CTG-GTT-CAG |
| P\_Bac303 | VIC-AAG-GTC-CCC-CAC-ATT-G-MGB |
| *Bifidobacterium* | Fbifid\_09c | CGG-GTG-AGT-AAT-GCG-TGA-CC |
| Rbi5d\_06 | TGA-TAG-GAC-GCG-ACC-CCA |
| P\_Bifid | 6FAM-CTC-CTG-GAA-ACG-GGT-G-MGB |
| *C. leptum* | Clept\_08 | GAA-TTA-AAC-CAC-ATA-CTC-CAC-TGC-TT |
| Clept\_09 | CCT-TCC-GTG-CCG-SAG-TTA |
| PClept01 | 6FAM-CAC-AAT-AAG-TAA-TCC-ACC-MGB |
| SYBR Green® | *E. coli* | EcoliF | CAT-GCC-GCG-TGT-ATG-AAG-AA |
| EcoliR | CGG-GTA-ACG-TCA-ATG-AGC-AAA |
| *Lactobacillus-Leuconostoc* | Lacto\_04 | CGC-CAC-TGG-TGT-TCY-TCC-ATA-TA |
| Lacto\_05 | AGC-AGT-AGG-GAA-TCT-TCC-A |
| *C. coccoides* | g-Ccoc-F | AAA-TGA-CGG-TAC-CTG-ACT-AA |
| g-Ccoc-R | CTT-TGA-GTT-TCA-TTC-TTG-CGA-A |
| Cluster XI | Cluster XI F1 | AC-GCT-ACT-TGA-GGA-GGA |
| Cluster XI R2 | GAG-CCG-TAG-CCT-TTC-ACT |
| Cluster I/II | Cluster I F1 | TAC-CHR-AGG-AGG-AAG-CCA-C |
| Cluster I R2 | G-TTC-TTC-CTA-ATC-TCT-ACG-CAT |
| Enterococci | EntF | CCC-TTA-TTG-TTA-GTT-GCC-ATC-ATT |
| EntR | ACT-CGT-TGT-ACT-TCC-CAT-TGT |
| Staphylococci | staph16S-F | TTTGGGCTACACACGTGCTACAATGGACAA |
| staph16S-R | AACAACTTTATGGGATTTGCWTGA |