

Supplementary

Table S1 The makeup of the control diets for percent calories from protein, carbohydrate and fat (Beijing, China, Beijing Huafukang Biological Technology Co. Ltd, Cat.No.1025)

| | % By weight | % kcal from |
|--------------|-------------|-------------|
| Protein | ≥18.0 | ≥56.2 |
| Carbohydrate | ≥5.0 | ≥15.6 |
| Fat | ≥4.0 | ≥28.1 |

Table S2 The makeup of the western diets for percent calories from protein, carbohydrate and fat (TD.88137 diet, Harlan, Southern Easton, MA, USA)

| | % By weight | % kcal from |
|--------------|-------------|-------------|
| Protein | 17.3 | 15.2 |
| Carbohydrate | 48.5 | 42.7 |
| Fat | 21.2 | 42.0 |

Table S3 Primers for real-time PCR assays

| Gene | qPCR primer sequence |
|---------------|--|
| <i>Actb</i> | 5'-GATGTATGAAGGCTTTGGTC-3' 5'-TGTGCACTTTTATTGGTCTC-3' |
| <i>Il-6</i> | 5'-AAGAAATGATGGATGCTACC-3' 5'-GAGTTTCTGTATCTCTCTGAAG-3' |
| <i>Tnf-a</i> | 5'-CATCTTCTCAAAATTCGAGTGACAA-3' 5'-TGGGAGTAGACAAGGTACAACCC-3' |
| <i>Inos</i> | 5'-AATCTTGGAGCGAGTTGTGG-3' 5'-CAGGAAGTAGGTGAGGGCTTG-3' |
| <i>Cers2</i> | 5'-TCATCCCTTCTCAGTATTGGT-3' 5'-ATCCTTTCGCTTGACATCAG-3' |
| <i>Cers4</i> | 5'-ACCCTGAATTTGTCCCTGTA-3' 5'-CTTGAAGTCCTTGCGTTTG-3' |
| <i>Cers6</i> | 5'-TGTGCCATAGCCCTCAAC-3' 5'-CTCCGAACATCCCAGTCC-3' |
| <i>Sptlc1</i> | 5'-TACGAGGCTCCAGCATACC-3' 5'-TCAGAACGCTCCTGCAACT-3' |
| <i>Sptlc2</i> | 5'-CCATGCGTCACTGGTTCTA-3' 5'-GTCCGAGGCTGACCATAAA-3' |
| <i>Sptlc3</i> | 5'-ACATCCATGAGTCCCGTAG-3' 5'-TCCATACCTCCAATGTTCC-3' |
| <i>Degs1</i> | 5'-GGTCGTCCATGAACGAGTA-3' 5'-TGAAATAGCCAGAGTCTACAA-3' |
| <i>Cerk</i> | 5'-ATCTCCACGGGACAATAAA-3' 5'-GGCCATACAGGGCTTTC-3' |
| <i>Cerk1</i> | 5'-GAAGCATGGCTCTTAGGGT-3' 5'-CTCCTCTGTGGGCTGTAT-3' |
| <i>Asah1</i> | 5'-AATAACACTTGGGTTGTCAC-3' 5'-TAGGATACCCAGATAACCAC-3' |
| <i>Asah2</i> | 5'-AGAGAGAGCAAGGTATTCTTC-3' 5'-ACTATTCACAAAGTGGTTGC-3' |
| <i>Acer2</i> | 5'-GTGTGGCATATTCTCATCTG-3' 5'-TAAGGGACACCAATAAAAGC-3' |
| <i>Acer3</i> | 5'-GATTCAGTGAAGAACTTTTCG-3' 5'-AGAGAAACTTCACTTTTGGC-3' |
| <i>Sphk1</i> | 5'-ACAGACCATCCAAAGGTAGTTT-3' 5'-CTCTATTCTGTGCTCAGTCTGTC-3' |
| <i>Sphk2</i> | 5'-GTACTIONCATGTTGGGCATCTT-3' 5'-CATACTCCACTAACTCCCCA-3' |
| <i>Sgpl1</i> | 5'-GAACCGACCTCCTCAAGCT-3' 5'-TCATACACCCAGACTATCAGC-3' |
| <i>Sgpp1</i> | 5'-GAGCAACTTGCCGCTCTACTA-3' 5'-GGTCGAGATTCCAGATCCAGAA-3' |
| <i>Spd1</i> | 5'-GCCTGCAAAGTCTTATTCAC-3' 5'-CACCACATCGTCCTCAAAG-3' |
| <i>Smpd2</i> | 5'-GCCCAGTTCATCCACCAC-3' 5'-CCTCAGTCTCAACGAAAGC-3' |
| <i>Smpd3</i> | 5'-TCATGGACGTGGCCTATC-3' 5'-ACCTGCACCTTGAGAAACAG-3' |
| <i>Smpd4</i> | 5'-GGAATCTCCGATGCCTACA-3' 5'-ATCATTGGACCACTTGGGT-3' |
| <i>Samd8</i> | 5'-CAGACCTACCCACCACTCC-3' 5'-TAGCACAGAATCACGCCAC-3' |
| <i>Sgms2</i> | 5'-TGGTATTGGTTGGGTTATGG-3' 5'-CGGGCACAGGTAACGTAGTG-3' |
| <i>Galc</i> | 5'-CCGATTTCTCTTCTTGCT-3' 5'-GGTTCAATATGCGACTCCAA-3' |
| <i>Gba2</i> | 5'-CGTCCTTTGCCCTCGTC-3' 5'-TGCCACCACTCCACTCATC-3' |
| <i>Gla</i> | 5'-ACCCTTTCATAAGCCCAATT-3' 5'-GGTCCAGCGACTTCAACAA-3' |
| <i>Enpp7</i> | 5'-CGGCAAATACATCGAGAACC-3' 5'-CTCTGGATACCGAGCGTGGC-3' |
| <i>Ugcg</i> | 5'-GCTTCGTGCTCTCGTGG-3' 5'-TTGCCTTCTTGTGAGGTGT-3' |