**Supplement:**

Table S1: The list of guide sequence RNA used in the manuscript

| **Marker** | | **Sequence** |
|---|---|---|
| sc-430719: Accå CRISPR/Cas9 KO Plasmid (m) is a pool of 3 different gRNA plasmids: | sc-430719 A: | GCAGAATTTGTTACTCGTTT |
| | sc-430719 B: | AATGCATGCGATCTATCCGT |
| | sc-430719 C: | AAGTGTATCTGAGCTGACGG |
| sc-430335: Accʃ CRISPR/Cas9 KO Plasmid (m) is a pool of 3 different gRNA plasmids: | sc-430335 A: | CGTGGTCATGGTGACGCCCG |
| | sc-430335 B: | GATCAGTACGTCCCTGTCCC |
| | sc-430335 C: | CGACGGTGAAATCTCTGTGC |
| GapmeRs | ACC negative control 5'-3' | AACACGTCTATACGC |
| | ACC alpha 5'-3' | TTTAGCGTTGGTGGTC |
| | ACC beta 5'-3' | CGAAAGAGCCGATTTG |
| Tgfb1 | Forward, 5'-3' | TGATACGCCTGAGTGGCTGTCT |
| | Reverse, 3'-5' | CACAAGAGCAGTGAGCGCTGAA |
| Col1a1 | Forward, 5'-3' | CCTCAGGGTATTGCTGGACAAC |
| | Reverse, 3'-5' | CAGAAGGACCTTGTTTGCCAGG |
| Col3a1 | Forward, 5'-3' | GACCAAAAGGTGATGCTGGACAG |
| | Reverse, 3'-5' | CAAGACCTCGTGCTCCAGTTAG |
| col6A1 | Forward, 5'-3' | TGCCCTGTGGATCTATTCTTCG |
| | Reverse, 3'-5' | CTGTCTCTCAGGTTGTCAATG |
| Srebp1c | Forward, 5'-3' | ATCGGCGCGGAAGCTGTCGGGGTAGCGTC |
| | Reverse, 3'-5' | ACTGTCTTGGTTGTTGATGAGCTGGAGCAT |
| Acly | Forward, 5'-3' | TTCGTCAAACAGCACTTCC |
| | Reverse, 3'-5' | ATTTGGCTTCTTGGAGGTG |
| Fas | Forward, 5'-3' | ATGCACACTCTGCGATGAAG |
| | Reverse, 3'-5' | CAGTGTTCACAGCCAGGAGA |
| Elovl6 | Forward, 5'-3' | CGGCATCTGATGAACAAGCGAG |
| | Reverse, 3'-5' | GTACAGCATGTAAGCACCAGTTC |
| Scd1 | Forward, 5'-3' | GCAAGCTCTACACCTGCCTCTT |
| | Reverse, 3'-5' | CGTGCCTTGTAAGTTCTGTGGC |
| Gpat1 | Forward, 5'-3' | CAACACCATCCCCGACATC |
| | Reverse, 3'-5' | GTGACCTTCGATTATGCGATCA |
| G6pd | Forward, 5'-3' | CATCACCCTGGTACAACTCTT |
| | Reverse, 3'-5' | CGGCAACTAAACTCAGAAAAC |
| Pltp | Forward, 5'-3' | CCTAGCAAGACCTCTGCCAGTA |
| | Reverse, 3'-5' | GGACAGAAGGTTGGAGCCACAA |
| Pnpla3 | Forward, 5'-3' | ACGTGCTGGTGTCTGAGTTCC |
| | Reverse, 3'-5' | AGGGACGTTGTCGCTCACTC |
| Dgpt1 | Forward, 5'-3' | ACCGCGAGTTCTACAGAGATTGGT |
| | Reverse, 3'-5' | ACAGCTGCATTGCCATAGTTCCCT |
| bactin | Forward, 5'-3' | CCAGCCTTCCTTCTTGGGTAT |
| | Reverse, 3'-5' | TGCTGGAAGGTGGACAGTGAG |

**Materials S1**

General chemicals, reagents and other materials for cell culture were purchased from Fisher Scientific, USA. $^{13}C_2$-sodium acetate was from Sigma-Aldrich, St. Louis MO. Pre-coated cell culture plates for podocytes culture (BioCoat) were from Corning, Kennebunk ME. RIPA buffer (89901) was from thermo scientific, Rockford, IL complete protease inhibitor cocktail was from Sigma (R0278). Complete protease inhibitor cocktail was from Roche Diagnostic, Mannheim Germany (11836170001). Agarose conjugated antibodies against ACC1 (sc-137104), ACC2 (SC-390344 AC), Fibronectin (SC 59826 AC) for immunoprecipitation and Alexa flour 546 conjugated antibodies against Neph1 (sc-373787 AF 546) and Megalin (sc-515772 AF 546), fibronectin (sc-59826) as well as CRISPR/cas 9 plasmids for ACC1 (sc-430719), and ACC2 (sc-430335) were from Santa Cruz biotechnology, Dallas TX. Enhanced chemiluminecent substrate for HRP (ECL) was from Thermoscientific, Waltham, MA (32106). Antibody for ACC1 protein detection was from thermofisher (21923-AP); ACC 2 was from LS Bio, Seattle WA (LSC806941) and fibronectin from abcam, Waltham MA (ab2413). Gels and reagents for Western blotting was from Invitrogen (Sample buffer NP0007, reducing buffer NP0009, 4-12% gel NP0321). Malonyl Co-A ELISA kit (MBS705127) was from MYBioSource, San Diego, CA. AMAXA cell line nucleofector kit (VCA-1003) for electroporation was from Lonza, Cologne AG, Germany. Antisense LNA (GapmeR) and RNeasy plus RNA extraction kit (cat #74134) was purchased from Qiagen, Germantown, MD. cDNA reverse transcription kit (cat # 4374966) was from applied biosystem Grand Island NY and SYBR green qPCR kit (Qs 1005) was from Alkali Scientific Inc. Fort Lauderdale FL.